MECHANIX ILLUSTRATED

APRIL

15¢

DO PUBLIC LIBRARY
nology Department
BINDERY

Hook's Hydrofin—Page 94

cCAHILL TESTS THE NEW OVERHEAD-VALVE FORD

$7,000,000,000 FOR DOOR-TO-DOOR SALESMEN

Fastest Sidecar—Page 76

Commander V-8 Starliner "hard-top" convertible.

Chrome wheel discs optional at extra cost—decora
and other specifications subject to change without no

Studebaker again steps out ahead in style

HERE it is—the exciting new Studebaker styling that is the talk of the entire nation.

Here's glamor beyond words—distinction beyond question—in new Studebakers paced by the most beautiful "hard-top" in America.

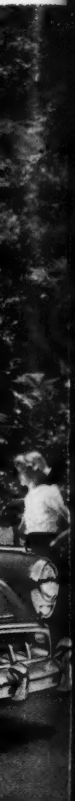
Stop in right away at a nearby Studebaker showroom and arrange to try out one of these eagerly responsive, amazingly thrifty Studebaker style stars.

Studebaker's the newest of the new for '52—a sprightly new Studebaker Champion in the lowest price field—a brilliant-performing new 120-horsepower Studebaker Commander V-8.

See Studebaker for '52

Studebaker, South Bend 27, Indiana, U. S. A.

Sparkling with eye appeal—the dramatically styled 195
debaker Champion, or Commander V-8, four-door s



ost—decorat
without not

yle

styled 1952
our-door se

C

Th
st
br
A

W
O
T
a

al
ar
jo

CAN YOU TELL WHY?

They went to the same school, live on the same street, both have bacon and eggs and coffee for breakfast, both twirl a ball at Martin's Bowling Alley Monday nights.

WHAT MAKES THEM DIFFERENT?

One thing—what they're doing about the future. The man who hasn't got any future isn't doing *anything* about it. That's why.

The man who *has* a future is doing something about it right this minute. He's building it with an I. C. S. course that will prepare him for a job he knows he'll be able to fill when it comes.

The dreamy man expects breaks—somehow they never come. The wide-awake man is letting I. C. S. show him how to *manufacture* breaks. They'll be his because he's ready for them.

Which man are YOU going to be like? If you're made for something more than a dead-end job that pays little and holds you back . . . if you feel the urge to climb and grow . . . check off, below, the field you want to get ahead in and send the coupon. Do it while you feel like it—don't let the urge die.

How about it, fellow?

INTERNATIONAL CORRESPONDENCE SCHOOLS

ICS

BOX 2319, SCRANTON 9, PENNA.

Without cost or obligation, please send me full particulars about the course BEFORE which I have marked X:

Business Courses
- ☐ Accounting ☐ Advertising
- ☐ Bookkeeping
- ☐ Business Administration
- ☐ Business Correspondence
- ☐ Business Law
- ☐ Certified Public Accounting
- ☐ Commercial ☐ Cost Accounting
- ☐ Federal Tax ☐ Foremanship
- ☐ High School and College
- ☐ Industrial Supervision
- ☐ Motor Traffic
- ☐ Personnel—Labor Relations
- ☐ Postal Civil Service ☐ Retailing
- ☐ Retail Business Management
- ☐ Sales Management
- ☐ Salesmanship ☐ Secretarial
- ☐ Stenography ☐ Traffic Management

Aeronautics Courses
- ☐ Aeronautical Engineer's, Jr.
- ☐ Aircraft Drafting and Design
- ☐ Aircraft Mechanic
- ☐ Engine Mechanic

Air Conditioning
- ☐ Heating
- ☐ Plumbing ☐ Refrigeration
- ☐ Refrigeration, Domestic
- ☐ Refrigeration & Air Conditioning
- ☐ Steam Fitting

Architecture
- ☐ Architectural Drafting
- ☐ Building Estimating
- ☐ Contractor's Building
- ☐ House Planning

Art Courses
- ☐ Commercial Art
- ☐ Magazine Illustrating
- ☐ Show Card and Sign Lettering

Chemical Courses
- ☐ Chemical Engineering
- ☐ Chemistry, Analytical
- ☐ Chemistry, Industrial
- ☐ Food-Plant Sanitation
- ☐ Petroleum Production & Refining
- ☐ Plastics ☐ Pulp and Paper Making

Civil Engineering
- ☐ Highway Engineering
- ☐ Reading Structural Blueprints
- ☐ Sanitary Engineering
- ☐ Structural Drafting
- ☐ Structural Engineering
- ☐ Surveying and Mapping

Communications Courses
- ☐ Telegraphy ☐ Telephony

Electrical Courses
- ☐ Electrical Drafting
- ☐ Electrical Engineering
- ☐ Electric Light and Power
- ☐ Lighting Technician
- ☐ Power House Electric
- ☐ Practical Electrician
- ☐ Practical Lineman

Diesel Engines
- ☐ Internal Combustion Engines

Mechanical Courses
- ☐ Forging ☐ Foundry Work
- ☐ Heat Treatment of Metals
- ☐ Industrial Engineering
- ☐ Industrial Instrumentation
- ☐ Industrial Metallurgy
- ☐ Machine Shop Inspection
- ☐ Mechanical Drafting
- ☐ Mechanical Engineering
- ☐ Millwrighting ☐ Mold-Loft Work
- ☐ Patternmaking—Wood, Metal
- ☐ Reading Shop Blueprints
- ☐ Sheet-Metal Drafting
- ☐ Sheet-Metal Worker
- ☐ Ship Drafting ☐ Ship Fitting
- ☐ Tool Designing ☐ Toolmaking
- ☐ Welding—Gas and Electric

Radio Courses
- ☐ Electronics
- ☐ FM and Television Servicing
- ☐ Radio, General ☐ Radio Operating
- ☐ Radio Servicing

Railroad Courses
- ☐ Car Inspector and Air Brake
- ☐ Diesel Locomotive
- ☐ Locomotive Engineer
- ☐ Locomotive Machinist
- ☐ Railroad Section Foreman

Stationary Engineering Courses
- ☐ Power Plant Engineering
- ☐ Stationary Fireman
- ☐ Stationary Steam Engineering

Textile Courses
- ☐ Cotton Manufacturing
- ☐ Designing, Finishing
- ☐ Loom Fixing ☐ Rayon Manufacturing
- ☐ Textile Engineering
- ☐ Woolen Manufacturing

Name_____ Age_____ Home Address_____

City_____ State_____ Working Hours_____ A.M. to_____ P.M.

Present Position_____ Employed by_____

Representatives in all principal cities. Canadian residents send coupon to International Correspondence Schools Canadian, Ltd., Montreal, Canada.

April 1952 • Volume 46 • Number 6
Copyright 1952, by Fawcett Publications, Inc.
A Fawcett Publication
Title Registered U. S. Patent Office

Top Cover: Staff photo by Daniel Rubin
Bottom Cover: Acme Newspictures

MECHANIX ILLUSTRATED

SPECIAL FEATURES . . .

$7,000,000,000 For Door-To-Door Salesmen 55
By Harry Kursh

From Cats To Cataclysms 60
By Lester David

New In Science 64

Why Don't We Have Baby Assault Tanks 66
By Frank Tinsley

Jeep-Going Fishermen 69

Topnotched MG 69

Foam-Fog Firefighter 70

Loading Aids For Aircraft 70

Prize Gadget: Kangaroo Paint Brush 71

MI Tests The Overhead-Valve Ford 6 . . 72
By Tom McCahill

Cover: Fastest Sidecar 76

Fly Diver 77

Money-Making Idea: Their Potatoes Make Dough 78
By H. W. Kellick

New For The Home 81

Pin-Up Car 82

New For The Road 83

Cover: Boat Rides On Stilts 84

Overhaul—Or Haul Away 86
By Tom McCahill

Great Jumpin' Rainbows 90
By Raymond R. Camp

New For The Fisherman 93

Fur Sleuth 94

Hobby Hall Of Fame: Sid Caesar 96

Editor's Workbench 14

Invention Clinic 18

Dear Editor 22

continued on page 8

W. H. FAWCETT, JR. — President
ROGER FAWCETT — General Manager
RALPH DAIGH — Editorial Director
AL ALLARD — Art Director
LEE WILSON — Production Director

WILLIAM L. PARKER — Editor

FEATURE STAFF
GILBERT PAUST — Feature Editor
ARTHUR UNGER — News Editor

CRAFTS & HOBBIES STAFF
ROBERT BRIGHTMAN, Crafts & Hobbies Editor
JOHN G. KINGDON — Boating Editor
ROBERT LASSON — Associate Editor
DANIEL R. RUBIN — Photography Editor
LARRY EISINGER — Advisory Editor

ART STAFF
FRANK A. TAGGART — Art Editor
AL HEIGHINGTON — Art Associate
HENRY E. BIRD — Art Associate
HELEN E. SLOWIN — Production Editor

MECHANIX ILLUSTRATED is published monthly by Fawcett Publications, Inc., Fawcett Building, Fawcett Place, Greenwich, Conn. Printed in U.S.A. Editorial offices: 67 W. 44th St., New York 36, N. Y. Advertising offices: New York 36, 67 W. 44th St.; Detroit 26, 1659 Guardian Building; Chicago 11, 612 N. Michigan Ave.; Los Angeles 17, 643 S. Flower St.; San Francisco 4, 111 Sutter St. General offices, Fawcett Building, Fawcett Place, Greenwich, Conn. Shepard Spink, Advertising Director; Roscoe K. Fawcett, Circulation Director; Gordon Fawcett, Treasurer; Allan M. Adams, Secretary; Al Allard, Art Director. Entered as second-class matter at the post office at Greenwich, Conn., under the act of March 3, 1879. Additional entry at Louisville, Ky. Copyright 1952 by Fawcett Publications, Inc. Reprinting in whole or in part forbidden except by permission of the publishers. Title registered in the U. S. Patent Office. Address manuscripts to MECHANIX ILLUSTRATED, 67 West 44th St., New York 36, N. Y. All remittances and correspondence concerning subscriptions as well as notification of change of address should be addressed to Circulation Department, Fawcett Building, Fawcett Place, Greenwich, Conn. Not responsible for lost manuscripts or photos. Unacceptable contributions will be returned, if accompanied by sufficient first class postage. Price 15c a copy. Subscriptions $1.80 per year in the United States and Possessions. 20c per copy in Canada and other foreign countries, subscriptions $2.40 per year in Canada and Pan America. Other foreign countries $3.15 per year. Foreign subscriptions and sales should be remitted by International money order in U. S. Funds payable at Greenwich, Conn. Advertising forms close fifth of second month preceding date of issue.

MEMBER AUDIT BUREAU OF CIRCULATIONS

AUDELS T.V.-RADIO SERVICE LIBRARY

2 VOLS. $6 COMPLETE PAY ONLY $1 A MO.

HERE IS LATE INFORMATION IN A HANDY FORM FOR RADIO & TELEVISION REPAIRMEN, SERVICEMEN AND STUDENTS

IT PAYS TO KNOW!

AUDELS T.V.-RADIO SERVICE LIBRARY presents the important subjects of Modern Radio, Television, Industrial Electronics, F.M. Public Address Systems, Auto, Marine & Aircraft Radio, Phonograph Pick-Ups, etc. Covers Basic Principles—Construction—Installation — Operation — Repairs — Trouble Shooting. Shows How to get Sharp, Clear T.V. Pictures, Install Aerials—How to Test. Explains Color Systems & Methods of Conversion. 1001 Facts—Over 1260 Pages—625 Illustrations of Parts & Diagrams—Valuable for Quick Ready Reference & Home Study. Tells How to Solve T.V. & Radio Troubles —Answers T.V. & Radio Questions.

Get this information for Yourself, 7 DAY TEST—ASK TO SEE IT!

MAIL ORDER

AUDEL, Publishers, 49 W. 23rd St., New York 10, N.Y.

Mail AUDEL'S T.V. RADIO SERVICE LIBRARY 2 Vols. $6 on 7 days free trial. If O.K. I will remit $1 in 7 days and $1 monthly until $6 is paid. Otherwise I will return them.

Name _____

Address _____

Occupation _____

Employed by _____ 31

AUDELS Carpenters and Builders Guides

4 vols. $6

Inside Trade Information for Carpenters, Builders, Joiners, Building Mechanics and all Woodworkers. These Guides give you the short-cut instructions that you want—including new methods, ideas, solutions, plans, systems and money saving suggestions. An easy progressive course for the apprentice and student. A practical daily helper and Quick Reference for the master worker. Carpenters everywhere are using these Guides as a Helping Hand to Easier Work, Better Work and Better Pay. To get this assistance for yourself, simply fill in and mail the FREE COUPON below.

Inside Trade Information On:

How to use the steel square—How to file and set saws—How to build furniture—How to use a miter box—How to use the chalk line—How to use rules and scales—How to make joints—Carpenters arithmetic—Solving mensuration problems—Estimating strength of timbers—How to set girders and sills—How to frame houses and roofs—How to estimate costs—How to build houses, barns, garages, bungalows, etc.—How to read and draw plans—Drawing up specifications—How to excavate—How to use settings 12, 13 and 17 on the steel square—How to build hoists and scaffolds—skylights—How to build stairs—How to put on interior trim—How to hang doors—How to lath—lay floors—How to paint

AUDEL, Publishers, 49 W. 23rd St., New York 10, N.Y.

Mail Audels Carpenters and Builders Guides, 4 vols., on 7 days free trial. If OK I will remit $1 in 7 days and $1 monthly until $6 is paid. Otherwise I will return them. No obligation unless I am satisfied.

Name _____

Address _____

Occupation _____

Employed by _____ 31

WHAT EVERY AUTO MECHANIC WANTS TO KNOW

1800 PAGES

This Big Practical Book gives full information with working diagrams covering the principles, construction, ignition, service and repair of modern cars, trucks and buses.

Diesel Engines, Hydramatic and Fluid Drives Fully Explained.

A complete Guide of 1800 pages, with over 1500 illustrations showing inside views of the working parts, with instructions for service jobs.

IT PAYS TO KNOW

How to fit pistons—How to locate engine knocks—How to fit connecting rod bearings —How to service main bearings—How to recondition valves—How to time valves—How to adjust fan belts—How to adjust carburetors and chokes—How to rebuild a clutch—How to service automatic transmissions—How to service brakes—How to adjust steering gear—How to cope with ignition troubles—How to service distributors—How to time ignition—How to "tune up" an engine.

$4 COMPLETE • PAY $1 A MO. TO GET THIS ASSISTANCE FOR YOURSELF SIMPLY FILL IN AND MAIL COUPON TODAY.

Step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a handy form, Fully Illustrated and Easy to Understand. Highly Endorsed. Check the book you want for 7 DAYS FREE EXAMINATION. Send No Money, Nothing to pay Postman.

CUT HERE

MAIL ORDER

AUDEL, Publishers, 49 W. 23 St., NEW YORK 10, N. Y.

Please send me postpaid for FREE EXAMINATION books marked (X) below. If I decide to keep them I agree to mail $1 in 7 Days on each book or set ordered and further mail $1 monthly on each book or set until I have paid price, otherwise I will return them.

- ☐ TRUCK & TRACTOR GUIDE, 1299 Pages . . . $ 4
- ☐ AUTOMOBILE MECHANICS GUIDE, 1800 Pages 4
- ☐ DIESEL ENGINE MANUAL, 575 Pages 2
- ☐ MACHINISTS HANDY BOOK, 1650 Pages . . . 4
- ☐ WELDERS GUIDE, 400 Pages 1
- ☐ BLUE PRINT READING, 416 Pages 2
- ☐ MATHEMATICS & CALCULATIONS, 700 Pages. 2
- ☐ SHEET METAL PATTERN LAYOUTS, 1100 Pages 4
- ☐ SHEET METAL WORKERS HANDY BOOK, 388 Pgs. 1
- ☐ MECHANICAL DRAWING GUIDE, 160 Pages . . 1
- ☐ MECHANICAL DRAWING & DESIGN, 480 Pages 2
- ☐ AIRCRAFT WORKER, 240 Pages 1
- ☐ TELEVISION SERVICE MANUAL, 384 Pages . . 2
- ☐ RADIOMANS GUIDE, 914 Pages 4
- ☐ ELECTRONIC DEVICES, 216 Pages 2
- ☐ ELECTRIC MOTOR GUIDE, 1000 Pages 4
- ☐ ELECTRIC WIRING DIAGRAMS, 272 Pages . . 1
- ☐ ELECTRICIANS EXAMINATIONS, 250 Pages. . 1
- ☐ ELECTRIC POWER CALCULATIONS, 425 Pages. 2
- ☐ HANDY BOOK OF ELECTRICITY, 1440 Pages. . 4
- ☐ ELECTRIC DICTIONARY, 9000 Terms 2
- ☐ ELECTRIC LIBRARY, 7000 Pages (12 Book Set) 18
- ☐ MARINE ENGINEERS HANDY BOOK, 1258 Pgs. 4
- ☐ SHIPFITTERS HANDY BOOK, 250 Pages . . . 1
- ☐ REFRIGERATION & Air Conditioning, 1280 Pgs. 4
- ☐ MILLWRIGHTS & MECHANICS GUIDE, 1200 Pgs. 4
- ☐ POWER PLANT ENGINEERS GUIDE, 1500 Pages 4
- ☐ ENGINEERS & FIREMANS EXAMS, 525 Pages . 1
- ☐ PUMPS, Hydraulics & Air Compressors, 1658 Pgs. 4
- ☐ ENGINEERS LIBRARY (3 Book Set) 9
- ☐ MECHANICAL DICTIONARY, 950 Pages 4
- ☐ GARDENERS & GROWERS GUIDES (4 Book Set) 6
- ☐ CARPENTERS & BUILDERS GUIDES (4 Book Set) 6
- ☐ PLUMBERS & Steamfitters Guides (4 Book Set) 6
- ☐ MASONS AND BUILDERS GUIDES (4 Book Set) 6
- ☐ PAINTERS & DECORATORS MANUAL, 450 Pgs. 2
- ☐ HOUSE HEATING GUIDE, 1000 Pages 4
- ☐ OIL BURNER GUIDE, 384 Pages 1

Check NOW!

You Can Look Over Any Guide In Your Own Home — Start the Easy Payments If Satisfied

MAIL THIS TODAY

Name _____

Address _____

Occupation _____

Employed by _____ 31

I Trained These Men

E. J. STREITENBERGER, New Boston, O., ... ing course, I mad... week fixing set... time. Now se... Television sets...

PHILLIP G. ... Louisville 8, K... have been oper... Servicing busi... years I did $14... business; net p...

S. W. DINWIDDIE, ... ville, Ill., writes, "S... finishing course, wo... servicing shop. No... Engineer of WCUN... Police Radio Instal...

A. HERR, New C... Pa., writes, "Hav... doubled my salary since start... ing in Radio full time. Am employed by Station WKBO as transmitter operator. Future looks bright to me."

L. HAUGER, San Bruno, Calif., tells us, "I accepted a position as Radio and Television Technician . . . promoted to manager of Television Service and Installation."

LEANDER ARNOLD, Pontiac, Mich., says, "While learning, made $5 to $10 a week repairing Radios in my spare time. Now I have a spare time shop in my home."

NORMAN H. WARD, Ridgefield Park, N. J., writes, "4 years ago, I was a bookkeeper with a hand-to-mouth salary. Now I am employed by a key ABC station."

I'll Train You RADIO-

PRACTICE SERVICING OR COMMUNICATIONS

I Send You Many Kits

For both my Servicing Course and my Communications Course, I send you many Valuable Kits of Parts for PRACTICAL EXPERIENCE. They "bring to life" theory you learn in my illustrated texts. Some equipment from both courses is shown below. As part of my Servicing Course, you build a complete, powerful Radio Receiver, a Multitester useful in earning extra spare time money, an A.M. and F.M. Signal Generator, etc. In any Communications Course, you assemble a low-power Broadcasting Transmitter that shows how to put a station "on the air," a Wavemeter, and an Electronic Multitester for measuring voltage, current, resistance, impedance, etc. This and other equipment you build with Kits I send is yours to keep.

Want Your Own Business?

Many N.R.I.-trained men operate successful Radio-Television sales and service businesses. Let me show you how, starting with spare time earnings as their capital, they build good incomes from their own shops.

ALEDO PUBLIC LIBRARY

AT HOME for Good Jobs in TELEVISION

There is Success--Good Pay--Security for You in America's Fastest Growing Industry

EXTRA PAY IN ARMY, NAVY, AIR FORCE

If you expect to go into military service, mail coupon NOW. Knowing Radio, TV, Electronics can help you get extra rank, extra prestige, more interesting duty at pay up to several times a private's base pay. You are also prepared for good Radio-TV jobs upon leaving service. IT'S SMART TO TRAIN WITH N. R. I. NOW. Mail Coupon TODAY.

Do you want good pay, a job with a bright future and security? Would you like a profitable shop of your own? The fast growing, prosperous RADIO-TELEVISION industry is making these opportunities for you. Radio alone is bigger than ever. 90 million home and auto Radios, 3100 Broadcasting Stations, Two-Way Radio for buses, taxis, etc., are making opportunities for Servicing and Communications Technicians and FCC-Licensed Operators.

Television is TODAY'S Good Job Maker

In 1946 only 6,000 TV sets sold. In 1950 over 5,000,000. By 1954, 25,000,000 TV sets will be in use, according to estimates. Over 100 TV Stations are operating in 35 states. Authorities predict there will be 1,000 TV Stations. This means new jobs, more jobs, good pay for qualified men.

Many Soon Make $10 A Week Extra in Spare Time

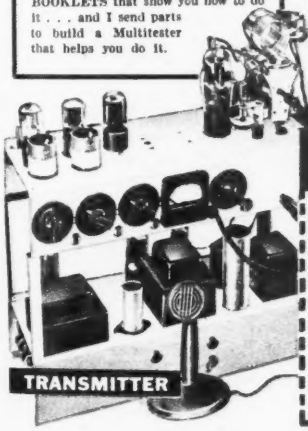
Keep your job while training at home. Hundreds I've trained are successful RADIO-TELEVISION TECHNICIANS. Most had no previous experience; many no more than grammar school education. Learn Radio-Television principles from illustrated lessons. Get PRACTICAL EXPERIENCE. See on the opposite page some of the devices my students build from Kits of Parts I furnish; also practice servicing Radios or operating transmitters—experiment with circuits common to Radio and Television. You keep all equipment. Many students make $5, $10, a week extra fixing neighbors' Radios in spare time. SPECIAL BOOKLETS start teaching you the day you enroll.

Send Now for 2 Books FREE—Mail Coupon

Act Now! Send for my FREE DOUBLE OFFER. Coupon entitles you to Sample Lesson on Servicing; shows how you learn Radio-Television at home. You'll also receive my 64-page book, "How to Be a Success in Radio-Television." You'll read what my graduates are doing, earning; see photos of equipment you practice with at home. Send coupon in envelope or paste on postal. J. E. Smith, President, Dept. 2DC, National Radio Institute, Washington 9, D. C. OUR 39TH YEAR.

Make Extra Money in Spare Time While Learning

Many of my students earn money fixing neighbors' Radios in their spare time while learning, often average $5, $10, a week. I send you SPECIAL BOOKLETS that show you how to do it . . . and I send parts to build a Multitester that helps you do it.



Actual Lesson and 64 page Book BOTH FREE

Mail Coupon Now!

MR. J. E. SMITH, President, Dept. 2DC
National Radio Institute, Washington 9, D. C.

Mail me Sample Lesson and 64-page Book, "How to Win Success in Radio-Television"—both FREE. (No salesman will call. Please write plainly.)

NAME ..... AGE .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

Approved Under G. I. Bill

AMAZING NEW LOW PRICED BURGESS ELECTRIC SPRAYER

Makes Painting Quick and Easy

- Paint anything—indoors or outdoors!
- Spray Flit, DDT, or other insecticides!
- Precision made and guaranteed!
- Low Priced! Guaranteed 100% satisfactory or money refunded promptly!

TRY IT 10 DAYS FREE!

This amazing NEW Burgess Model VS-600 All-Purpose Home Electric Sprayer is just what you've been waiting for! It does so many things, so well, so quickly, so easily that you'll use it practically every day. *Precision-made . . . built to last!* Equipped with new multi-vein spinner nozzle, it sprays practically everything—enamel, lacquer, glossy paints, flat paints, varnish, water, water-base and oil-base garden sprays, light oils, insecticides. Paints many times faster and smoother than a brush, does not leave streaks or laps, gives "professional" results every time.

COMPLETE—READY TO USE—ONLY $10.95

Imagine—you get the complete sprayer for the amazingly low price of only $10.95 complete. No outside compressor, motor, hose or tank to buy. Equipped with a large 25-ounce capacity Mason type jar marked with convenient graduations. Stainless steel parts are corrosion proof—easy to keep clean. 8-foot U.L. approved cord set.

SEND NO MONEY NOW—JUST MAIL COUPON

We will ship C.O.D. plus delivery charge, if you prefer. Or send cash with order and sprayer will be rushed postpaid. Either way, you receive the full protection of our guarantee . . . your money back at any time within 10 days if you are not delighted! Every home owner, farmer, mechanic and handyman needs one of these fine sprayers. Wonderful in the factory—and a splendid and welcome gift. Mail the coupon NOW! **$10.95 COMPLETE**

110-125 VOLTS 50-60 CYCLE A.C.

Weighs only 2½ lbs. Roomy grip and Fast Action Trigger

FOR THE HOME

FOR THE GARDEN

FOR FURNITURE

FOR SCREENS

SPECIAL DELUXE MODEL VS-600-UL

Approved by Underwriters' Laboratories, Inc.

Contains all the features found in the Model VS-600 — *plus* extra heavy cord, coil and other components. The finest self-contained electric sprayer money can buy! 115 volts A.C. **ONLY $12.95 COMPLETE**

NEW! HANDY COMPACT MODEL VS-130

For touch-up and Small Areas

Ideal for spraying toys, models, garden tools, etc. Fingertip switch, spray adjuster knob, 8-oz. jar. Convenient for home and workshop. 110-125 volts A.C. **$7.95**

JOHN H. FAIR CO., Dept. S-311
25 East Lake Street, Chicago 1, Ill.

Please send me the sprayer checked below. It is understood that whether I order C.O.D. or enclose remittance, you guarantee satisfaction or money back upon return of merchandise within 10 days.

☐ VS-600 Sprayer, $10.95
☐ VS-600-UL Sprayer, $12.95
☐ VS-130 Sprayer, $7.95

Name .....

Address .....

City .....Zone....State.....

☐ SEND C.O.D. I will pay postman full purchase price plus delivery charge on arrival.
☐ Full purchase price enclosed. Send postpaid.

Train Quickly For

A Better Rating If Drafted— A Vital Job In Industry If Not

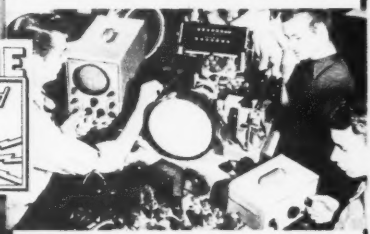
in these

OPPORTUNITY FIELDS

COYNE 53rd YEAR

RADIO-TELEVISION

Plays a Vital Roll in Nation's Defense



The tremendous growth of this new field is almost unbelievable. New stations are rapidly bringing television to all parts of the country. RADIO—TELEVISION and ELECTRONICS are vital to our Defense Program. Unusual opportunity to get in on ground floor of this vital field that also offers a world of opportunities for a real future when the emergency is over. **Train quickly** on actual equipment **at Coyne** by practical-technical methods. Get big Free Book today.

ELECTRICITY—

The Power Behind Our Defense Program

A great opportunity field and vital to Defense. Thousands of trained Electrical and Electronics men needed in good jobs with a real future when the emergency is over. Why be satisfied with a "no future" job? Get Free Book that tells how thousands have prepared quickly for Electricity and Electronics at Coyne.

TRAIN QUICKLY AT COYNE FOR VITAL FIELDS

ELECTRICITY–RADIO-TELEVISION–ELECTRONICS–VITAL in Industry and Armed Forces. TRAIN QUICKLY for better rating, if drafted—vital job in Industry, if not. Trained men whether 16 or up to 50 needed. Many men with physical handicaps can qualify. Prepare now for steady, well paid, essential jobs in A FIELD THAT ALSO OFFERS A REAL FUTURE WHEN THE EMERGENCY IS OVER.

Not "Home-Study"

We do not teach by mail. All training is given in our Great Training Shops in Chicago, plus necessary theory. No advanced education or previous experience needed.

START NOW—PAY LATER

Enroll now, pay most of tuition later. Part time employment assistance while at **Coyne.** ***SPECIAL TUITION PLAN IF DRAFTED.*** **G.I. approved.**

1 You are TOLD the how and why of each job.

2 You're shown how to do typical jobs by trained instructors.

3 You DO practical job YOURSELF on equipment.

Mail Coupon for Big FREE BOOK

Whether you prefer Electricity or Television-Radio train on actual equipment, at Coyne. Fill in and mail coupon TODAY. Paste it on a penny postcard if you wish. A big fully illustrated booklet and complete details will come by return mail. No salesman will call.

B. W. COOKE, President

COYNE SCHOOL

A TECHNICAL TRADE INSTITUTE CHARTERED NOT FOR PROFIT
Established 1899
500 S. Paulina Dept. 42-53H
Chicago 12, Illinois

ELECTRICITY ★ TELEVISION ★ RADIO ★ REFRIGERATION ★ ELECTRONICS

B. W. COOKE, President
COYNE SCHOOL
500 S. Paulina St., Chicago 12
Dept. 42-53H

Send your BIG FREE BOOK and details of your training offer. This does not obligate me and no salesman will call. I am interested in

☐ ELECTRICITY ☐ TELEVISION-RADIO

NAME.....

ADDRESS.....

CITY.....STATE.....

New Amazing Invention — "Magic Art Reproducer"

DRAW—The First Day

NO LESSONS! NO TALENT!

Anyone Can Draw With This Amazing New Invention—Instantly!

Complete For Only $1.98

You Can Draw Your Family, Friends, Anything From REAL LIFE—Like An Artist Even if You CAN'T DRAW A Straight Line!

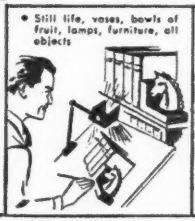
Yes, anyone from 5 to 80 can draw or sketch or paint anything now . . . the very first time you use the "Magic Art Reproducer" like a professional artist — no matter how "hopeless" you think you are! Anything you want to draw is automatically seen on any sheet of paper instantly! Then easily and quickly follow the lines of the "picture image" with your pencil . . . and you have an accurate original drawing that anyone would think an artist had done. Also makes drawing larger or smaller as you wish. Anyone can use it on any desk, table, board, etc.—indoors or outdoors! No other lessons or practice or talent needed!

HAVE FUN! BE POPULAR! Everyone will ask you to draw them. You'll be in demand! After a short time you may find you can draw well without the "Magic Art Reproducer" because you have developed a "knack" and feeling artists have — which may lead to a good paying art career.

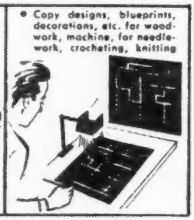
Also Excellent for Every Other Type of Drawing!

• Human Figures • Outdoor Scenes, landscapes, buildings • Still life, vases, bowls of fruit, lamps, furniture, all objects • Copy photos, other pictures, portraits, etc. • Copy blueprints, designs, decorations, for woodwork, machines, for needlework, crocheting, knitting • Copy all cartoons.

• Outdoor Scenes, landscapes, buildings



• Still life, vases, bowls of fruit, lamps, furniture, all objects



• Copy designs, blueprints, decorations, etc. for woodwork, machine, for needlework, crocheting, knitting

FREE! "SIMPLE SECRETS OF ART TRICKS OF THE TRADE"

This valuable illustrated guide is yours FREE with order of "Magic Art Reproducer," Easy ABC art tricks that anyone can follow on different techniques, effects, proportions, perspectives, shading, color, animated cartoons, human figures to use with "Magic Art Reproducer" for added touches to your drawings.

SEND NO MONEY!

Free 10-Day Trial! Just send name and address. Pay postman on delivery $1.98 plus postage. Or send only $1.98 with order and we pay postage. You must be convinced that you can draw anything like an artist, or return merchandise after 10-day trial and your money will be refunded.

NORTON PRODUCTS, Dept. ML-4, 296 Broadway, New York 7, N. Y.

crafts and hobbies...

continued from page 2

Magazine Table 99
Hi-Fi Record Player 100
Easy Chair 104
Know Your Saw Blades 106
Make Your Home Termite-Proof ... 108
Survival Kit 111
Outdoor Grill 112
Shop Tips 114
Workbench Award Winners 116
Car Care—Piston Rings 118
Auto Aids 121
Model Half-Track 122
Home Hints 124
New For The Shop 126
Drilling Holes In Glass 127
Butler's Table 128
The Carpenter's Brace 130
Outboard Motor Maintenance 132
Turnstile Drier 137
Monthly Photo Contest 138
Pictures With Binoculars 139
Automatic Paper Safe 140
Basic Darkroom Equipment 144
Photo Shorts 149
Amateur Telescope Maker's Page .. 153

Why Haven't TV Owners Been Told These Facts?

Was your set purchased after the spring of 1947? Then here is the full, uncensored story of how you can avoid those $15-$20 repair bills...how you can avoid those $30-$60 a year service fees...and still get the perfect, movie-clear picture you've dreamed about!

HOW MANY TIMES this week have you had to get up to fix a jumpy or flickering TV picture . . . a washed-out, muddy picture? How many times have you had to put up with ghosts—snow—static—"weak" channels?

And how many times have you had to lose a full night's TV entertainment—because you had to call a repairman who couldn't come "till tomorrow"?

99% OF THESE BREAKDOWNS ARE UNNECESSARY!

Do you know that the same exact set now playing in your home—no matter what make or model—has been playing in manufacturer's test rooms for months,—**and playing perfectly!**

These sets have been subjected to incredible "Breakdown Tests"—running 24 hours a day—7 days a week—4 weeks a month—some of them for as much as 17 months!

They have been tested against every conceivable type of viewing hazard. They have been tested up to 125 miles away from the station . . . tested against the interference of an entire warehouse of electrical appliances . . . tested in special, steel-ribbed buildings which ordinarily would produce several distinct ghosts.

And in almost every case, these sets produced perfect, movie-clear pictures — without major breakdowns—for as much as 1 year! Here are some of the reasons why:

WHAT TV EXPERTS HAVE LEARNED ABOUT YOUR SET

1. **If your set is properly cared** for as these sets were, it need break down only once in an entire year! You may actually have to call a repairman only **once** a year! You can save the $30-$60 service fees you are now paying, and you can save most of your $10-$15 repair bills!

2. **If your set is properly cared** for, it can actually give you perfect movie-clear reception the other 364 days a year . . . without special equipment, without the help of a repairman—up to 100 miles away from your station!

3. **And most important,** these experts discovered that you do not have to be a handyman to get this top TV performance. You need no mechanical knowledge whatsoever. You do not even have to touch a single nut, bolt, or wire. Here's why:

5 MINUTES A WEEK FOR PERFECT RECEPTION

These television experts have discovered that your TV set, like your body, gives warning signals before a major breakdown. For instance, after your set was installed, it probably played perfectly for the first week. But then it began to suffer from vibration, jarring, the interference of other electrical appliances in your home! The picture might suddenly flop over or flicker—lines may appear on your screen.

Now—if you had the knowledge to quickly make a few minor adjustments—on the outside controls of your set—you could correct those symptoms—you could keep your set playing perfectly and you could prevent major breakdowns, exactly as they were prevented in these manufacturer's tests.

If you do not have this knowledge—if you do not make these adjustments . . . then your set will weaken, you will have a constantly bad picture and you will have to call in a repairman. Remember—you pay that repairman, not for his work, but for his knowledge! If you had that knowledge, you would not have to pay him at all!

A TV EXPERT AT YOUR ELBOW 24 HOURS A DAY!

Now suppose you had a television expert at your elbow 24 hours a day. Suppose that every time your set began to flicker, jump, become distorted or dissolve into lines or sags, that this expert would show you exactly what knob on the outside of your set to turn—to correct this trouble in less than 30 seconds without the slightest danger to yourself or your set.

Suppose that every time you were annoyed by ghosts, snow, or weak channels, this expert would show you a non-mechanical trick, without complicated charts or diagrams, that would eliminate most of these faults within 15 minutes, and restore the perfect, movie-clear reception your set should give you.

Yes, and suppose that even when your set went black, this expert could show you a way to immediately locate and change the burnt-out tube, in less than 6 minutes, without the slightest danger or mechanical skill, and save the $10-$15 you'd pay a repairman.

ALL THE INFORMATION YOU NEED ABOUT YOUR TV SET

This is exactly what a new book, the TV OWNER'S GUIDE does for you. Written by 3 of the country's top television experts, this book is guaranteed to save you $65 to $100 on your service repairs this year alone—save you as much as $75 on special antennas, filters—save you as much as $150 when you buy a new set!

AVOID 90% OF ALL TV REPAIR CALLS!

This book shows you how to fix 90% of your TV troubles yourself—in your own front room—without mechanical knowledge or tools—in less than 2 minutes apiece. There is no danger, because you do not touch any part carrying current. There is no skill needed, because hundreds of How-To picture instructions track the trouble to its source, actually lead you step-by-step through the entire adjustment. With this TV OWNER'S GUIDE at your side you will probably need to call in a repairman only once a year, saving the money that 90% of repairs are costing you today.

INCREASE YOUR SET'S PULLING POWER 9 TIMES!

This book gives you a complete section on special, power-packed antennas that cost you less than $10, yet increase your set's pulling power 4, 6, and 9 times. These antennas will give you movie-clear reception without expensive boosters up to 90 miles away from your station. They will automatically eliminate most neighborhood ghosts—snow—static.

A ONE VOLUME TV ENCYCLOPEDIA

Here are complete sections on buying—installing your set. Here are your legal rights with your landlord, your present service company, your repairman. Here's information you can trust on buying a new set . . . getting a 40% discount . . . avoid gypsters . . . what you must know about manufacturer's warranties, auction sales, installment payments. Here is a full section on repair rackets . . . the only sure way to get a reliable repairman . . . how much he should charge and how to make him return your set fast.

This amazing book is so complete it even has sections on avoiding TV eye-strain, your children and TV, how to take thrilling pictures from your TV screen, even an entire chapter on easy radio repairs.

SEND NO MONEY! TRY IT ONE YEAR AT OUR RISK . . .

Send for your copy of the TV OWNER'S GUIDE TODAY. When book arrives, pay only $1.98 plus postage—less than ½ the cost of a single service call! Try this book at our risk for a year. If it does not save you at least $30 in that year alone—return for your money back. **Act now! Receive magic trouble spotter absolutely free!**

PROVE IT YOURSELF!

NOW! SEE HOW EASY IT IS to get perfect TV reception. Cure these TV troubles yourself—IN LESS THAN 2 MINUTES.

ZAGS

CURE ZAGS. Turn set around. Locate HOR. SYN. control on back, and turn slowly to right. (If ZAGS increase, reverse to left). Zags will disappear, giving you a perfect picture. THAT'S ALL THERE IS! You have made a $5 repair in less than 30 seconds!

SNOW

CURE SNOW (This will work in 1 out of 3 cases. If it does not, see TV OWNER'S GUIDE, page 72). Turn set around. Locate point where antenna is screwed to set. TURN OFF SET AND THERE IS NO DANGER. Unscrew antenna ends, scrape clean with knife or scissor, and replace. THAT'S ALL! You may have just made a $10 repair in less than 1 minute!

BURNT-OUT TUBE (Sound OK—No Picture)

CURE BURNT-OUT TUBE. Let set run for 5 minutes. TURN OFF SET AND PULL OUT PLUG. Touch each small tube in set with your finger. There is no current in the small tubes, therefore THERE IS NO DANGER IN TOUCHING THEM! The good tubes will be hot. The bad tube will be cold. Remove and replace with new tube from any local shop. THAT'S ALL! You have just made a $15 repair in less than 2 working minutes! . . . as easy as changing a light bulb!

AND THAT'S JUST A SAMPLE!! Here are just a few of the other minor repairs you can make yourself—without tools—without mechanical knowledge—with the TV OWNER'S GUIDE.

SAVE $30-$60 a Year Service Fees!
Avoid 90% of TV repair calls!
Do it yourself with the TV OWNER'S GUIDE!

A FRANK STATEMENT TO TV OWNERS . . . TV BUYERS:

During the next year—no matter what the brand, model or condition of your TV set, you will probably waste $30-$100 on it!

You will waste this money for one reason—because you do not know the TRUTH about your television set. Because you do not realize that $400,000,000 worth of research have gone into simplifying that set—into making it so simple that **you yourself can keep it in perfect playing condition—without a repairman.**

Here then are the startling facts behind this claim—facts that you can prove in your own home. Read this ad—make these tests—decide for yourself whether it's worth a 3c stamp to learn the full, money-saving story.

THOUSANDS OF TV OWNERS SWINDLED!

Honest dealers—servicemen warn against fly-by-nighters.

IN NEW YORK CITY 10,000 set owners lose $65 to $100 apiece when a fly-by-night service company mysteriously folds.

IN DETROIT—Hundreds of owners report sets actually damaged by "student" repairmen sent out on full-price service contracts.

IN CHICAGO—Complaints flooding in that sets going to fly-by-night repair shops are coming back MINUS essential parts! Makeshift contraptions substituted that burn out in 3 to 5 weeks.

This is only a sample! Most television dealers and servicemen are completely honest. They are just as shocked . . . just as worried by these developments as you are!

But the fact remains that if you do not know a few simple facts, you stand an excellent chance of losing money when you buy or when you repair your set!

PROTECT YOURSELF—LEARN THESE FACTS:

Do you know the only sure way to get an honest repairman? . . . how to tell whether a repairman is overcharging you . . . substituting inferior parts . . . keeping your set too long? Do you know the 3 tests you must make before you buy a new set? How to avoid hidden installment payments? Trumped-up prices? Excessive "Television rent raises"?

TV BUYERS! SAVE $50 TO $150 ON NEW GIANT SCREEN SET!

Here is a complete 1952 TV Shopper's Guide—inside information that may save you 1/3 of the total retail price of your set! . . . yours as just one part of this amazing TV OWNER'S GUIDE.

Send today to Bedford Co., Dept. MX3, 699 Madison Ave., New York 21, N. Y., and get the Magic Trouble Spotter FREE with your TV OWNER'S GUIDE. Big 11 inch by 44 inch chart actually pictures 99% of TV troubles! Shows you how to fix them at a glance! But this offer is limited. Fill in and mail coupon NOW!

SEND NO MONEY! Mail Free Gift Coupon NOW!

BEDFORD CO., DEPT. MX3, 699 MADISON AVE., N. Y. 21

Gentlemen: Without obligation, please rush me the new TV OWNER'S GUIDE FOR NO RISK EXAMINATION AND TRIAL. I AGREE TO PAY POSTMAN ON ARRIVAL $1.98 PLUS POSTAGE. If I am not satisfied I may return at any time within a year for full money back.

Also send me ABSOLUTELY FREE, the Magic Trouble Spotter chart, to keep as a FREE GIFT if I keep the TV OWNER'S GUIDE or not.

Name_____

Address_____

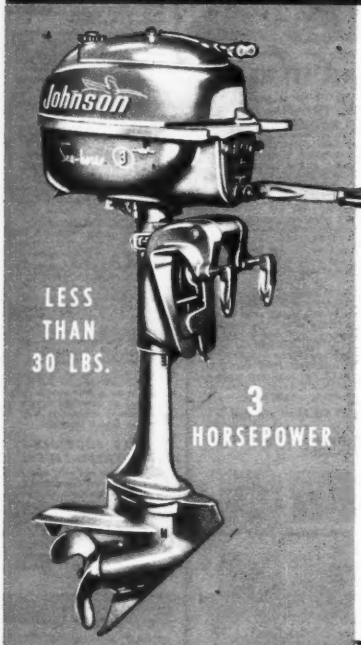
City_____ Zone____ State____

☐ Save more!! If you send $1.98 with coupon, we pay all postage charges. Same money back guarantee.

PATENTED ANGLE-MATIC DRIVE SLIDES RIGHT THRU WEEDS

IT SKIS RIGHT OVER UNDERWATER OBSTRUCTIONS

AND KEEPS ON DRIVING— IN INCHES OF WATER!



Amazing!

NEW JOHNSON ANGLE-MATIC DRIVE

NOW, a fishing motor that will take your boat wherever it will float. No more fishin' the fringes. *Go right in!* The all-new Sea-Horse 3, featuring a new kind of propulsion unit, takes you through weeds, over rocks and stumps, in shallows, *where others dare not venture*. Keeps right on driving in *inches* of water. And compact? Here is an Alternate Firing Twin—with traditional Johnson ruggedness—developing 3 hp—*that weighs less than 30 lbs.!*

See your Johnson Dealer. Look for his name under "Outboard Motors" in your classified phone book.

FOR 1952 — FOUR GREAT ALTERNATE FIRING TWINS

SEA-HORSE 3: All new. 3 hp in a twin that weighs less than 30 lbs! **$145.00***

SEA-HORSE 5: 5 hp. America's largest selling outboard motor. **$187.50***

SEA-HORSE 10: 10 hp. Gear Shift. 6 gal. Mile-Master Fuel Tank. **$295.00***

SEA-HORSE 25: 25 hp. Less than 4 lbs. per hp! Gear Shift. 6 gal. Mile-Master Fuel Tank. Synchro Twist-Grip Speed Control. Sensational performance and value. **$390.00***

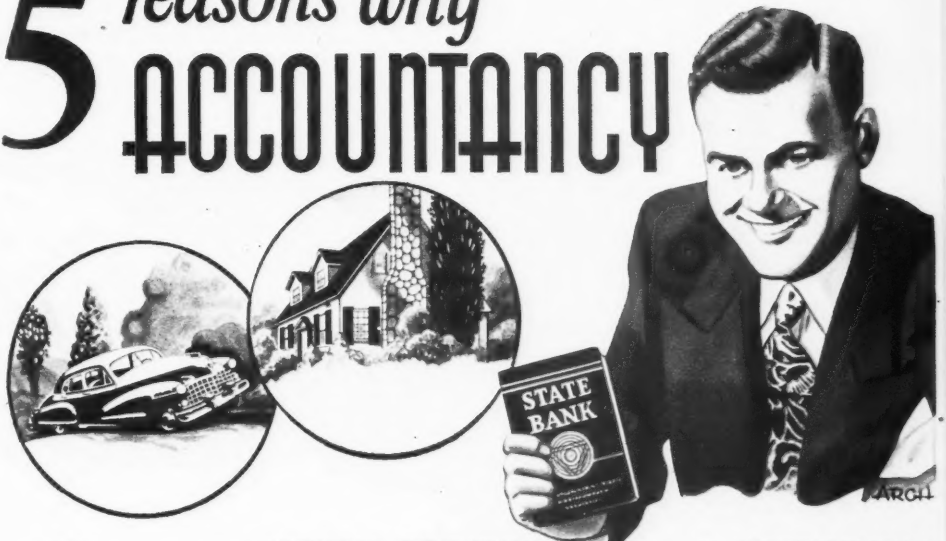
FREE! New Sea-Horse Handy Chart describes all motors in detail. Write!

JOHNSON MOTORS, 200 Pershing Road, Waukegan, Illinois
Johnson Motors of Canada, Peterborough

Johnson SEA-HORSE 3

*OBC Certified brake hp at 4000 rpm. *Prices f.o.b. factory, subject to change without notice.*

5 *reasons why* ACCOUNTANCY



offers you MORE MONEY . . . *and* SUCCESS!

REASON #1. If you were an expert accountant right now, chances are you would find yourself among the highest-paid of all professional men and women. Even back in "depression years," surveys showed that accountants earned more on the average than men in other major professions.

REASON #2. The demand for accountants is great—everywhere. All businesses must have trained accountants to cope with ever-growing requirements. It's a profession offering wide opportunity—always—to the man who knows.

REASON #3. You can fit into any business, anywhere in the country—because accounting principles are universal. Think what this means in terms of security and independence!

REASON #4. Accountancy is open to all. Any man or woman of good intelligence, who enjoys figure work and is willing to follow LaSalle's systematic "problem method" plan, can rapidly qualify for a highly profitable, enjoyable lifetime career . . . and he doesn't have to finish his training before beginning to "cash in."

REASON #5. Without losing a day from your present work, you can prepare in spare hours at home, at low cost, under LaSalle's step-by-step "Problem Method" of "learning by doing." This famous plan accounts for LaSalle's remarkable record of having trained nearly 10 per cent of all Certified Public Accountants in the U. S. . . . and of having put many thousands of others into high-paying careers.

Send today for LaSalle's interesting booklets, "Accountancy, the Profession That Pays," and "Success Reports." Learn about the five great fields of opportunity . . . and LaSalle's time-tested plan for helping men and women to rapid advancement, higher income, greater prestige and professional standing. The coupon below will bring these fact-filled booklets to you—without cost or obligation—also, a free sample lesson showing LaSalle's famous "Problem Method" plan of instruction.

LASALLE
417 S. Dearborn St.,
CHICAGO 5, ILL.

GET FREE SAMPLE LESSON

WHICH . . . ?
can help you most

- ☐ Accounting—Elements to C.P.A. Coaching
- ☐ Bookkeeping
- ☐ Cost Accounting
- ☐ Auditing
- ☐ Income Tax
- ☐ C.P.A. Coaching

LaSalle Extension University
A Correspondence Institution

Dept. 4493-HR, 417 S. Dearborn St., Chicago 5, Ill.

Please send me, free of all cost or obligation, a sample lesson in Accounting . . . also, your 48-page illustrated books, "Accountancy, the Profession that Pays," and "Success Reports."

Name.....*Age*.....

Address.....

City, Zone, State.....

YOU CAN AFFORD PYROIL

• When you tell your gas station attendant to "add Pyroil"—you're buying 250 miles of driving protection, for less than the cost of a single gallon of gas. A small investment for such a large return.

• Pyroil improves lubrication—because it causes oil to cling to piston rings and cylinder walls. Pyroil protects all engine parts from exposure, condensation and rust. With Pyroil, you're assured of "easy starts" at all times, because Pyroil keeps your engine lubricated, whether driving or idling.

• The small cost of Pyroil gives such a large return. Add Pyroil—add miles to your car.

Pyroil for Aircraft Engines

Use Aircraft Pyroil B for lubricating oil, Aircraft Pyroil A for gasoline.

GIVEN!
An attractive Pyroil metal savings bank—takes coins up to 50c pieces. MOTORISTS, it's yours for the asking—sent postage paid.

Manufactured and Guaranteed by Pyroil Company, 621 Main Street, La Crosse, Wisconsin.

Canadian Distributors: Central Purchasing Agencies, Ltd., Toronto, Ontario

PYROIL COMPANY
621 Main Street, La Crosse, Wisconsin

I want my car to last and run properly. Please tell me more about Pyroil and how it can accomplish this for me.

Name .....

Address .....

City or Town..... State.....

NEW! 10 FORWARD SPEEDS

ALL AT MAXIMUM HORSEPOWER —PLUS REVERSE

Bready GARDEN TRACTOR

with SELECT-O-SPEED Transmission

The most practical garden tractor ever built. You can instantly change tractor speed, while tractor is running, yet always have maximum power at the drawbar! You select the speed to suit the job. Other new features include Safety Reverse and Free Wheeling. Complete line of implements for year 'round use. Don't buy a tractor until you've seen the new Bready!
WRITE TODAY for free literature, name of dealer.

The BREADY TRACTOR and IMPLEMENT Company
Box 250 - Solon, Ohio

ONLY $32.50 LESS MOTOR

Favorite of home owners and craftsmen for 20 years! SPEEDY SPRAYER gives your work that professional paint finish everyone admires. Sprays paint, enamel, varnish, lacquer, etc. . . . 4 to 7 times faster than hand brushing! Lightweight, portable, uses any ¼ H.P. motor. Improved diaphragm principle assures clean, oil-free air. You'll find dozens of time and money saving uses for SPEEDY SPRAYER, including spraying insecticides 2-4-D and DDT. Complete outfit, without motor, only $32.50.

At leading hardware, lumber, and auto supply dealers.
FREE—*write for handy booklet "How to Spray."*

W. R. BROWN CORPORATION
2659 N. Normandy Ave. • Chicago 35, Illinois

INVENTORS

Learn how to protect your invention. The U. S. Patent Laws provide that any new and useful art, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if the act of invention is involved. Therefore, every inventor with a valuable invention should take advantage of the Patent Laws and proceed for patent protection in order to safeguard his rights.

A patent gives the inventor the exclusive right to prevent others from making, using, or selling the invention claimed in the patent for a period of seventeen years.

The Patent Laws were enacted for the benefit of the inventor to give him protection for the features of his invention which are patentable. These features must be properly and concisely set forth and claimed in a formal application for patent, in order to comply with the requirements of the Patent Laws. For that reason, unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and are prepared to serve you in the handling of your patent matters.

A specially prepared booklet entitled "Patent Guide for the Inventor", containing detailed information with respect to patent protection and procedure, together with a "Record of Invention" form will be promptly forwarded to you without obligation upon request.

CLARENCE A. O'BRIEN & HARVEY JACOBSON

Registered Patent Attorneys

23-D DISTRICT NATIONAL BUILDING

WASHINGTON 5, D. C.

The Editor's Workbench

Swing that hoe, grind that point, bust out the paint, lads, and clean up the joint! is the theme song of our M.I. Guy as he plunges his massive energies into the big spring overhaul.

Let's Keep It Clean, Boys

I am resting quietly on the back porch of my luxurious country hacienda, busily doing nothing, when all of a sudden this little monster M. I. Guy busts over the horizon. He is loaded to the gunwales with a lot of miscellaneous paraphernalia such as oil cans, saws, spark plugs, pliers, hammers, paint brushes and paint cans, a ladder, a hoe and Lord knows what all. There is a look in his wild eyes that makes me think of a demented moose I once knew who swallowed a gallon of turpentine. Knowing full well what such a look can mean in man or moose, I quickly roll over on my sternum and make like I have been dead for three days and am awaiting the mortician. But this M. I. Guy is a sly one.

—C'mon, you! says he. Get up off your back porch and start vibrating. There's work to be done!

—Wh-what? say I, l-lamely. W-work?

—Yes, work, jerk, says M. I. Guy, and fitting the deed to the word he jerks me to my feet, at the same time handing me enough stuff to stock a junior size hardware store.

—Look at that car! Look at that house! Look at that garden! he says, sweeping his arms around like a drunken windmill. We have got to get this junkpile of yours shaped up. Now. Because it's spring and everybody knows that in the spring a young man's fancy turns to thoughts of overhauling the automobubble, affixing new paint on the old plantation and scratching up the garden.

—Quite, quite mad, I murmur to myself as I try to concoct some dodge whereby I can deliver myself of this fiend and get back to a little solid rest and recuperation.

But it is no go. In a trice (that's twice twice) M. I. Guy has inoculated me with his devilish spirits and together we are making the welkin ring with the splat of oil, the shlup of paint, the bronchial wheeze of saw lacerating wet wood, the bark of knuckles on unresisting metal, the creak of mangy muscles (mine) pitting their puny parentheses against the ravages wrought by Old Man Winter.

—Ain't this fun? shouts M. I. Guy over the gurgle of the hose with which he is flushing out of Old Betsy's radiator the gunk of a winter's driving.

—Yup, it sure ain't, say I wittily, as I solder up a leaking gutter joint, apply a smidge of waterproof to a chimney flashing and realign the TV antenna, all the while making a mental note to putty and paint the storm windows before they get put away.

And as the day wears on, and I wear out, I am bemused by the peculiarly satisfying kick a normally slothful slob such as I can derive from the spring overhaul of all the gadgets and gismos a guy picks up over the years. Making new objects of wood or metal gives you one kind of a bang. But there's a real thrill of creation in reactivating the tired gizzards of a once fine power mower, for instance. Or restoring the bloom of youth to a sagging tool shed. Or even in chasing rust from a nondescript assortment of garden implements that only need a little loving care and elbow oil to make them new again.

As the purple shadows of evening gather round the old manse and all its accoutrements, which now look sharper than they have in a coon's age, M. I. Guy prepares to take his leave.

—What's the rush? say I. Come on in and have a cup of orangeade or something.

—Nope, gotta get up early tomorrow. There's work to be done!

—Surely not around here, say I.

—Nope, says he, I gotta get around to all those millions of guys that read M. I. Gotta get those fellows straightened out too.

I hope he does. Do you think he will?

See you next month.—*Bill Parker*

TRAIN AT HOME IN YOUR SPARE TIME

GET THE MONEY AND SECURITY YOU'VE ALWAYS WANTED!

L. J. ROSENKRANZ, President, National Schools, the man who has trained many, many men like YOU. Men who now own successful, respected businesses of their own. Men who hold important, high-paying positions in famous companies. You CAN be a success. Mail coupon for more details.

Let Me Show You How! Mail the Coupon for My FREE Books!

Each book has page after page in color. Gives you the complete story about my proved training method... tells how quickly it can train you for a secure, high-paying job. Don't wait. Get the facts. Send today for my valuable books on Radio-Television or Automotive-Diesel. Check the coupon at right and mail it to me today. Absolutely no obligation

NO SALESMAN WILL CALL!

I'll send you a **FREE SAMPLE LESSON TOO,** if you act fast! Shows how easy it is to learn with National Schools Home Training.

Let National Schools – a resident-training school for nearly 50 years–train you at home for today's unlimited opportunities in Radio-TV or Automotive-Diesel. National Schools is one of the largest schools of its kind in the world It has 4 big buildings of modern shops and labs. Its faculty is considered tops. You learn fast from easy lessons –all perfected under actual shop conditions. Approved for eligible vets.

Earn Extra Money while you're learning! I'll show you how!
EASY TERMS • FREE GRADUATE SERVICE
Mail coupon today—find out more!

DON'T PUT IT OFF...MAIL TODAY!

NATIONAL SCHOOLS, Dept. A-42
4000 South Figueroa Street
Los Angeles 37, California

Mail in envelope or paste on penny postal card

Send me *Free* the book checked below and the sample lesson. I understand no salesman will call on me.

☐ **"MY FUTURE IN RADIO-TELEVISION & ELECTRONICS" OR**
☐ **"MY FUTURE IN DIESEL-AUTOMOTIVE & ALLIED MECHANICS."**

NAME _____ AGE _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____
☐ Check here if you were released from the service less than 4 years ago.

WHICH HIGH-PAYING FIELD DO YOU WANT?

TODAY'S SHORTAGE OF TRAINED TECHNICIANS CREATES CHANCE OF A LIFETIME FOR YOU... IN EITHER FIELD!

RADIO-TELEVISION & ELECTRONICS

JOB SECURITY! BIG MONEY! FOR YOU IN TODAY'S EXPANDING INDUSTRIES!

Think of it! With guided missiles, radar and other electronic devices so important to national defense. With big, new developments in color TV With over 90,000,000 home and auto radios, over 12,000,000 TV sets With more than 3100 radio stations...over 100 TV stations–and more building every day–imagine the terrific opportunity you have!

You Train at Home—In Your Spare Time

With National Schools Master Shop Home Training, you master *all* phases of Radio-Television-Electronics. You learn fast from hundreds of pictures and diagrams. All lessons have been developed and tested in National Schools famous shops and labs. No wonder your National Schools training is so up-to-date, practical, interesting. And so easy!

LOOK! WE SEND YOU ALL THESE PARTS! —and you keep them!

We send you lots of standard professional parts. You do lots of practical experiments. You learn step by step. Until you can build the big Superheterodyne Receiver you see above–and other important test units. Mail the coupon–today.

Only National Schools Gives You This Professional Multi-Tester

You get this factory-made new Multi-Tester ... an important instrument every Radio-TV man must have.

I TRAIN YOU FOR GOOD-PAYING JOBS LIKE THESE

Radio Station Engineer; District Service Manager; Aircraft Radio Inspector; Inspector Technician; Own your own repair shop; Service Specialist; Special Civil Service Positions; Sound Truck Operator; Complete Television Service and many others.

Thousands of National Schools graduates have jobs like these. Why not you? Start your career–be sure to mail the coupon today.

OR

AUTOMOTIVE-DIESEL AND ALLIED MECHANICS

GREATEST DEMAND FOR TRAINED MEN IN HISTORY! NOW IS YOUR CHANCE!

What an opportunity! With over 8 million older cars needing big service and repair jobs. With defense industry having more high-paying jobs than they can fill. With the Armed Forces offering quick advancement to trained mechanics. YOU ARE NEEDED as never before! Now you can get the good pay, security, the satisfaction of doing what you *want* to do! Don't delay–mail the coupon NOW!

Right in Your Own Home!

You learn all about Gasoline Engines, Diesel and Special-Fuel Engines, Automotive Tune Up, General Garage Mechanics, Auto Electrical Service. You get complete training for this great, growing industry.

Yet National Schools Home Training is easy! Because it's based on actual shop methods in National Schools big resident school. Mail the coupon for more details–NOW.

National Schools Gives You All These Tools

You start out owning the tools of your trade. A kit of standard, professional tools and equipment. They're all part of your course!
–And you keep them–they're yours!

I Offer You All These!

Basic Lesson Texts. Diesel Installation & Maintenance Instructions. Spare Time Lessons. Engine Service Manuals. Engine Repair Drive Systems. Diesel Electric Power Texts. Special Thermodynamic Instruction.

Attention: Men, Going into the Service Soon!

With National Schools training in Radio-Television or Automotive-Diesel, you have the opportunity to get into special service classifications. That means higher pay and grade, more prestige–right away! This is important–so be sure to mail the coupon today without fail.

WHICH OF THESE HIGH-PAYING JOBS WOULD YOU LIKE?

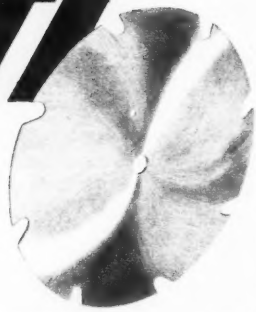
MOTOR TUNE UP SPECIALIST
DIESEL ENGINE SPECIALIST
FARM EQUIPMENT MECHANIC
YOUR OWN GARAGE OR REPAIR SHOP
GENERAL GARAGE MECHANIC
PARTS DEALER
AUTO ENGINE REBUILDING
FUEL INJECTION SPECIALIST

You can *have* secure jobs like these. Just mail the coupon–and find out!

NATIONAL SCHOOLS Los Angeles, California—Established 1905
In Canada: 193 E. Hastings St., Vancouver 4, B. C.

EXTRA BLADE
Bonus Special $1.00
With every PTI blade you buy at the regular price ... you get an extra blade for only $1 more. Ask your dealer.

PTI



The ORIGINAL Safety Saw Blade tested and approved by the World's leading Laboratories

For a dependable safety saw blade that eliminates "kick-backs" from circular sawing – insist on the genuine PTI blade. (U. S. Pat. No. 2,559,355).

Precision made of chrome vanadium steel by one of the world's leading saw blade manufacturers. Cuts cleaner, quieter, smoother—and requires 30% less power. Available in sizes from 7" to 16" and for standard makes of portable saws.

Write for circular giving full details.

Incorporated, 401 Broadway, New York 13

DRY OUT DAMP WORKSHOPS!

Amazing little Fedders Electric Dehumidifier dries damp rooms without messy chemicals! Plugs in like a radio, removes up to 3 gals. of moisture from the air every 24 hours. Stops damage from rust, mildew, rot, warp. Protects tools, wood, guns, luggage, furniture, linens. Compact and portable. No service worries. Runs for a few pennies a day. Write today for details on 5-day FREE home trial offer. Fedders-Quigan Corp., Dept. MI 2, Buffalo 7, New York.

fedders A GREAT NAME IN COMFORT

WAR SURPLUS BARGAINS

$500,000.00 INVENTORY for QUICK LIQUIDATION

Surplus items—hundreds of them for home, shop, factory, farm and outdoors use. New items, used items, reconditioned items—all at tremendous savings—all priced for quick sale.

Page After Page of Values

This big catalog shows page after page of amazing money saving values. Write for your copy today. Send 10c to cover postage, mailing, etc. Write today!

SEND TODAY FOR YOUR COPY **10c**

STARK'S Dept. MID 509 So. STATE STREET CHICAGO 5, ILLINOIS

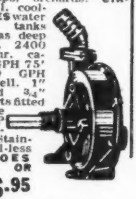
SHORTHAND IN 6 WEEKS AT HOME

Famous Speedwriting Shorthand system. No symbols; no machines; uses ABC's. Easy to learn; easy to write and transcribe. Low cost. 100,000 taught by mail. For business and Civil Service. Also typing. 29th Year. Write for FREE booklet to:

Speedwriting® Dept. 1704-2 55 W. 42 St., N. Y. 18, N. Y.

DRAINS Cellars, Wash Trays; **CIRCULATES Oil; IRRIGATES Gardens!**

ORIGINAL "Type P" Pump has 1,001 year 'round uses—home, shop, garden, farm. **DRAINS** cellars, cisterns, wash tubs, ditches, pools. **IRRIGATES** gardens, lawns, truck patches. **SPRAYS** crops, orchards. **CIRCULATES** oil, coolant. **SUPPLIES** water to elevated tanks from wells as deep as 25 feet. 2400 gals. per hr. capacity. 360 GPH 75' high. 1500 GPH from 25' well. 1" suction and ¾" discharge ports fitted for hose. Use ⅛ to ½ HP motor or engine. ½" Stainless Shaft; Oil-less Bearing. **DOES NOT CLOG OR RUST!**



ONLY $6.95

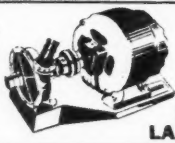
Motor coupling included.

WHICH OF THESE 5 PUMPING UNITS DO *YOU NEED?*
Easy to Assemble! Easy to Use!

LITTLE GUSHER Irrigates, drains, waters live stock, fights fires! Pumps 2000 GPH 25' high or 360 GPH 75' high. 2 HP engine with 3" power take-off V-pulley. Adjustable from 1700 to 4500 RPM. Portable. Dollar for dollar, pound for pound, the best pump value at **$69.00** complete with 1½" Bronze Foot Valve. 1½" suction hose, **$1.25** per foot. 1¼" discharge hose, **$1.00** per foot.

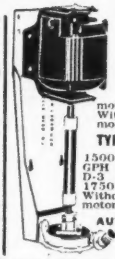
BIG GUSHER Pumps 7000 GPH. Complete with 3' of 2" suction hose and 2" foot Valve, only **$89.00.** 2" suction hose, **$1.75** per foot. 1½" discharge hose, **$1.25** per foot.

TYPE C-4 Direct drive. Ideal for plumbing fixtures below sewer line. Complete with ¼ HP motor, **$25.95.** Without motor, only **$11.25**



LOW-COST ACCESSORIES
All Bronze Foot Valve for 1" hose ---**$3.45**
1" Suction Hose, per foot ---------**$.38**
¾" Discharge Hose, per foot ------**$.22**

MONEY BACK GUARANTEE



TYPE D-3 Cleans 40' well or cesspool quickly! Drains, Irrigates, etc. Operates in any position. 400 GPH 40' high; 1400 GPH 20' high. With ⅓ HP ball-bearing 3450 RPM motor ------**$32.95.** Without motor------**$12.85**

TYPE D-4 Drains cellars, pools, boats. 1500 GPH 5' high; 600 GPH 13' high. Same as D-3 but with ½ HP 1750 RPM motor **$27.45** Without motor---------**$12.85**

AUTOMATIC SWITCH for 24" sump, fits D-3 and D-4. **$4.60.**

All prices POSTPAID if money order or check with order. West of Mississippi & Canada, add 50c for Type P; $1.00 for other models.

LABAWCO PUMPS, Belle Mead 29, New Jersey

NOW . . . GET EVERYTHING YOU NEED TO LEARN AND MASTER

TELEVISION

RADIO-ELECTRONICS ...AT HOME!

Use REAL commercial-type equipment to get practical experience

Your future deserves and needs every advantage you can give it! That's why you owe it to yourself to find out about one of the most COMPLETE, practical and effective ways now available to prepare AT HOME for America's billion dollar opportunity field of TELEVISION-RADIO-ELECTRONICS. See how you may get and keep the same type of basic training equipment used in one of the nation's finest training laboratories . . . how you may get real STARTING HELP toward a good job or your own business in Television-Radio-Electronics. Mail the coupon today for complete facts — including 89 ways to earn money in this thrilling, newer field.

ABOVE: Build and keep a real 17 INCH commercial TV receiver. Optional after completing regular training at moderate added cost.

D.T.I., ALONE, INCLUDES BOTH MOVIES and HOME LABORATORY
In addition to easy-to-read lessons, you get the use of HOME MOVIES — an outstanding training advantage — plus 16 big shipments of Electronic parts. Perform over 300 fascinating experiments for practical experience. Build and keep real commercial-type test equipment shown at right

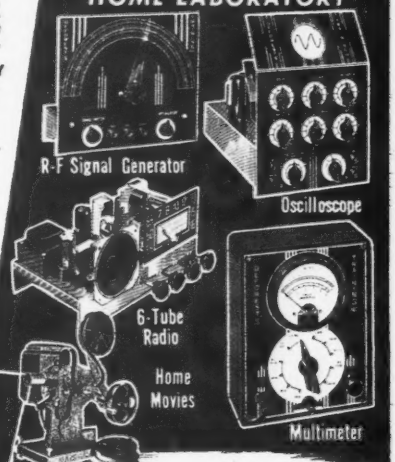
Get BOTH of these information packed publications FREE!

MODERN LABORATORIES
If you prefer, get all your preparation in our new Chicago Training Laboratories—one of the finest of its kind. Ample instructors, modern equipment. Write for details!

MILITARY SERVICE!
If you're subject to military service, the information we have for you should prove very helpful. Mail coupon today.

Here's the REAL THING!

SET UP YOUR OWN HOME LABORATORY



ACT NOW! MAIL COUPON TODAY!

DE FOREST'S TRAINING, INC. Dept. MI-4-1
2533 N. Ashland Ave., Chicago 14, Ill.

Without obligation, I would like your Opportunity News Bulletin showing "89 Ways to Earn Money in Television-Radio-Electronics"; also, the folder showing how I may prepare to get started in this thrilling field.

Name.....Age.....
Address.....Apt.....
City.....Zone.....State.....

"ONE OF AMERICA'S FOREMOST TELEVISION TRAINING CENTERS"

DeFOREST'S TRAINING, INC.
CHICAGO 14, ILLINOIS
A DeVRY INSTITUTION

Invention Clinic

JOSEPH H. KRAUS

Typewriter Eraser Mechanisms

AN entirely practical solution to the problem of erasing errors made on a typewriter should prove of great financial value to its inventor. To be acceptable, the paper must be left in a condition good enough so that it can be typed on again after the error is erased or otherwise obliterated. For speedy marketability, any eraser mechanism should be in the form of an attachment easy to use or apply to any typewriter.

Almost since the days of the earliest typewriter it was realized that some form of error-correcting system was needed badly. Yet, even though the commercial typewriter has been with us for 85 years, a practical erasing method still remains to be invented and marketed.

What's Needed

The specifications accompanying the patent granted to William Kline in 1914 said: "Changes and corrections can be easily and expeditiously made. . . . A device for the purpose, to be acceptable, must involve no interference with the typewriting machine, not require any alteration or modification of the machine structure and it must be easy and convenient of use or manipulation and of doing the work desired quickly and efficiently."

These qualifications, presented 38 years ago, remain a goal toward which any inventor could work. It may be that the technical problems are a little more difficult to solve today because of the improved design in machines which makes it necessary to have a more complicated device to bring the erasing system into position for proper operation. Also, greater attention needs to be paid to keeping paper scuffings and particles of the abrasive out of the working mechanisms. On the other hand, the greater use of electricity, both for lighting and electrical typewriters, makes it more easy to adapt electricity to the operation of the erasing unit.

Any inventor concocting a device which he thinks will perform in a satisfactory manner first should have a search made to determine if the thought is original. Then, he should produce and thoroughly test the working model.

It will not suffice to make one or two perfect erasures and conclude that the system is good. For example, let us assume that you have developed some sort of motor-driven rotary eraser. This may work perfectly for a short time. Then, as the eraser wears down, the usefulness drops off almost entirely. Even if the wheel is of the non-wearing type, some consideration must be given to the effectiveness of control to allow for more than one sheet of paper in the machine and to prevent undue punishment to the roller.

What's Been Patented

To brief you on some of the types of systems which have been protected, it might be well to review a few of the patented articles.

Many of the early patents cover a variety of erasing plates—metal tablets or other surfaces upon which the paper could be laid without removing it from the typewriter—after which the erasure could be made with any suitable instrument.

One such was patented by J. B. Hammond in 1883. It was a "broad and rigid metal sheet over which the paper can be bent without removing it from the carriage."

A modification of this appears in the patent granted in 1888 to J. W. Osborne, who specified "constructing an erasing tablet which is much rounder," hence it prevented an accidental fold in the paper which a flat shield might produce.

A freely removable attachable erasing tablet is specified in the issue granted the same year to A. S. Johnson. An erasing shield which would raise the character which is to

[*Continued on page* 20]

INVENTORS

If you believe that you have an invention, you should find out how to protect it. The first step is to have a search made of the prior pertinent U. S. patents. If a report on this search indicates that the invention appears patentable you can apply for a patent, and the specifications and claims should be prepared.

The firm of McMorrow, Berman & Davidson, with offices in Washington, D. C., is qualified to take the necessary steps for you. We can make a preliminary search on your invention, advise you whether we think it can be patented, and prepare your application for patent.

Unless you are fully familiar with the U. S. Patent Laws, we recommend that you engage the services of a Registered Patent Attorney to protect your interests. The patent laws are *your* laws. A patent gives you the right to prevent others from making, using or selling the invention claimed in your patent for a period of 17 years.

Use these patent laws for your protection. Investigate whether your invention can be patented. If you have what you believe to be an invention, we suggest that you have this firm make a search for you.

Send for a copy of our Patent Booklet entitled "How To Protect Your Invention," containing information about patent protection and patent procedure. Along with this we will also send you an "Invention Record" form, for your use in writing down and sketching details of your invention. We will mail them promptly. No obligation. They are yours for the asking.

McMORROW, BERMAN & DAVIDSON

Registered Patent Attorneys

PATENTS • COPYRIGHTS • PATENTS

1395 VICTOR BUILDING, WASHINGTON 1, D. C.

Never before anything like it!

8-inch ALL METAL TILT-ARBOR SAW

Blade tilts to 45° angle! Table stays level!

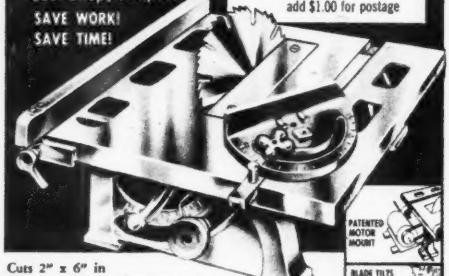
You Save $20 to $40!

Does the work of Power Saws costing as high as $60! Shop, compare!

SAVE WORK! SAVE TIME!

$19.95

West of the Mississippi $21.95
8-inch Combination Rip and Cross Cut Blade.....$2.95
add $1.00 for postage



Cuts 2" x 6" in 2½ seconds! Cuts hard or soft woods up to 2½ inches thick! Cuts joists, siding, rafters! Miters and bevels! Accurately rips wide or narrow panels! With attachments cuts dadoes and moldings! Makes frames, joints, slots, etc. Operates on either ¼ or ⅓ h.p. motor. The blade raises and lowers. The all metal precision ground and polished table *always* remains level. Patented improved mechanism tilts blade up to 45°. Patented built-in motor mount keeps belt at correct tension.

YOLANDS PRECISION TOOL CO.
20 BOYLSTON STREET, Boston 16, Mass. DEPT. T6

Please rush your new All Metal 8-inch Tilt-Arbor Saw. I enclose ☐ Check ☐ Money Order for $19.95 (West of the Mississippi $21.95) plus $1.00 for postage. Sorry no C.O.D's. If not delighted I may return the saw in 10 days for full purchase price refund.

Name .....

Address .....

City .....*Zone* .....*State* .....

☐ Check here if 8" combination rip and cross cut blade is desired, enclose $2.95 extra.

Develop Hidden Earning Power

STUDY LAW

at home! LL.B. Degree

Qualify yourself in spare time for advancement, greater earnings, business success. Now, more than ever, legal ability is in demand! Easy-to-understand step-by-step lessons and text material furnished—invaluable for permanent reference. Over 40 years expert teaching. 114,000 students enrolled. Easy payments. Find out now, at no cost, how study of law can help you. Write today for FREE Book "Law and Executive Guidance."

AMERICAN EXTENSION SCHOOL OF LAW
Dept. X-49, 646 N. Michigan Ave., Chicago, Ill.

Invention Clinic

[*Continued from page* 18]

be erased is another protected development of the same period.

A honey of an idea is disclosed in the patent granted in 1907 to E. C. McFadden. If someone could develop this to the point where it would work efficiently, many of the typists' troubles would be eliminated. This patent describes a small wire fork across the open tines over which is stretched a double ribbon. The side of the ribbon toward the paper is to be covered by an "ink which is to be of the same color as the paper." The side toward the keys is to remain untreated and serve merely as protection for the type faces. Correction is to be made by merely holding the fork in position, then striking the incorrect letter. This operation is to cover the character with the blanking-out ink thus to allow for the new letter to be struck over the old one.

Don't think that the mere development of a new idea in this field is enough to insure a fat contract with some typewriter company. Some of the moguls of the typewriter industry already own patents covering erasing attachments and modifications in the typewriter in which the eraser becomes part of the arrange-

[*Continued on page* 24]

INVENTORS

IF YOU WISH TO PROTECT YOUR INVENTION

YOU SHOULD TAKE STEPS TO PROTECT IT BY A U.S. PATENT

WRITE ME FOR "INVENTION RECORD" FORM

CARL MILLER
REGISTERED PATENT ATTORNEY

WOOLWORTH BLDG., 35th FLOOR, 42B NEW YORK CITY

INVENTORS

Whether an invention is patentable can be substantially determined by a search of the U. S. Patent records. Without obligation, write for information explaining the steps you should take to secure a patent.

JOHN N. RANDOLPH
Registered Patent Attorney
209 Columbian Building Washington 1, D. C.

PROVED IN *Performance...*

"MILE-O-METER"

Deluxe model now illuminated!

"OUT ON THE ROAD . . . that's where you can test and judge MILE-O-METER," says EUGENE J. BASILE of Patterson, N.J., after 26 years of driving.

"I have been driving an automobile for the past 26 years. A few months ago, I had a Mile-O-Meter gauge installed in my '51 Chevrolet car with Power Glide transmission, and I can truthfully state that since I have been driving by this remarkable gauge, my gasoline consumption decreased considerably. I firmly believe that some time in the future, Mile-O-Meter will be part of the standard equipment on all automobiles."

Thrill to this remarkable performance meter on your car. Mile-O-Meter shows gasoline consumption at a glance and warns you of motor deficiency immediately. Mile-O-Meter on your dashboard will register your miles per gallon faithfully at every speed and under every driving condition. It will show you at what speed your engine will deliver its maximum power, and can actually save you many gallons of gasoline. That isn't all. It serves as a constant check on the condition of your motor . . . warns you of operating imperfections for 31 different motor adjustments. Built with fine-watch precision, like the professional testers use in leading service stations, it will save you up to 5 to 10 dollars for each service check-up. No previous experience is required to install and understand the "Mile-O-Meter." The "Mile-O-Meter" will become your constant companion on every trip and enable you to save its cost in a very short time. This professional miles-per-gallon and motor tune-up gauge is an outstanding contribution to the motoring public. It is guaranteed for 100,000 miles.

DEALER INQUIRIES INVITED

SEE YOUR DEALER. IF HE CANNOT SUPPLY YOU, ORDER DIRECT TODAY!

TEACHES you how to drive economically — eliminates the Jack Rabbit starts and passing on hills — that's where you really drink up fuel.

SIMPLY mount meter on windshield frame or on dashboard area to suit your convenience with the aid of mounting brackets that can be bent into practically any position.

YOU can check your engine condition at all times, and if it is not operating efficiently, Mile-O-Meter will tell you how to correct the condition.

HUGE 24 page instruction book PLUS MILE-O-METER Mileage Calculator

Both included FREE with your order.

SEND TODAY!

Deluxe Model with Chrome Ring 3⅝" Dia. $14.95 Pp. Standard Model 2⅝" Dia. . . . $9.75 Pp. Both Incl. Fed. Tax

GALE HALL ENGINEERING DEPT. 148 BOSTON 18, MASS.

The most important new meter in America

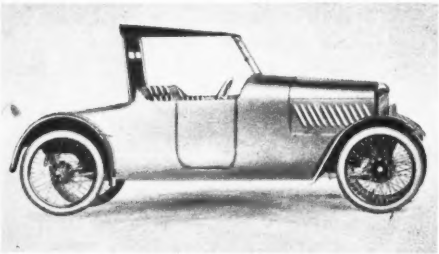
Dear Editor

Use this letters column as you see fit—make it a complaint box, question box, suggestion box or even a soap box. But use it! Our only requirement is that you sign your name and keep 'em short, interesting and clean. Address mail to: MECHANIX ILLUSTRATED, Letters Editor, 67 West 44th Street, New York 36, N. Y.

MI Monthly Mystery

Enclosed is a picture postcard of a car, found in a trunk in an old house. Can anybody tell me what kind of car it is?

Robert Fowler
Fredericktown, Pa.



New On The Road—Ghoul Dept.

I would like to see one page of MI each month devoted to pictures of wrecked cars. Two or four pictures of wrecked cars to the page would be very interesting. Fans could contribute pictures from their home towns.

William Prince, Jr.
Louis, S. C.

Would you like them with or without blood?

Our Eagle-Eyed Readers

In your February issue in the MI Tests the '52 Lincoln story on page 86 will you please tell me how Tom McCahill works his arithmetic? He states that the 1952 Lincoln has a 317 cubic inch displacement, 3⅛ bore and 3½ stroke. It's plain that something is wrong. Sometimes I think his head lacks more than just hair. I enjoy your magazine a great deal with the exception of McCahill. Put McCahill in charge of a section on fishing—he'd be a good man for that since he really tells some big ones.

Robert MacArthur
Meadville, Pa.

For all his dislike of Tom, reader MacArthur sure reads the stuff closely. Darned if he isn't right, too. The '52 Lincoln's bore is 3.8 inches, not 3⅛—a typographical error.

MI Land Rush

We have seen your article, Paradise On A Shoestring, on page 63 of the February 1952 MI and we wish to tell you that it has been well received in this office. The consensus is that the piece is well-written, well-reported, factual and interesting.

You will be interested in the response the article has caused. Approximately 300 to 400 requests for further information are received daily. Judging from past experience, this means a probable response of 10,000 over a period of a few weeks. It is probable that our regional offices are experiencing a heavy response also, but we have not heard from them as yet. Several Congressmen have also indicated an interest in our program as a result of requests sent directly to them.

Norma Hazeltine
Information Officer
U. S. Department of Interior
Bureau of Land Management
Washington, D. C.

Anybody Wanna Get A Head?

I'm a lonely man, all alone in the world and find much enjoyment in reading MI. Recently, I was interested in Skeletons, Shrunken Heads and Butterflies (February '52, page 100), the story about the company that sells oddities. I just happen to own four shrunken heads myself and would like to get rid of them. Any one want to buy them?

Langner G. Talbotte
San Francisco, Calif.

No, thank you. Were you . . . er . . . always alone in the world, Mr. Talbotte?

Ask A Silly Question . . .

Could you tell me how the Ford in the picture on page 91?

John Spencer
Lewisville, Tex.

Well, it was like this.

[Continued on page 29]

"We have been using your book on Auto Repair for the past year and feel like it is a third man around the shop."—*F. M. Scott, Stanwood, Wash.*

"Fixed motor in 30 minutes another mechanic had worked on half a day."—*C. Auberry, Murfreesboro, Tenn.*

"Instructions so clear, have no trouble learning anything about any car. Now working as mechanic in big plant."—*S. Ordonez, San Francisco, Calif.*

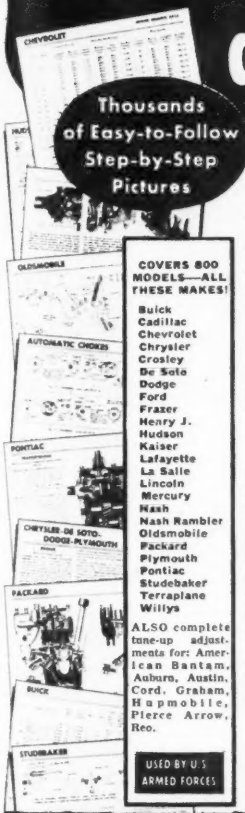
"So easy to understand—have done jobs with Manual I would not have attempted without it."—*C. L. Vanerstrom, Hazel Park, Mich.*

"I have found my MoToR Manual a wonderful help. It has put me in a position to do every job."—*S. L. Sharpless, Los Angeles, Cal.*

THOUSANDS OF MEN ARE RAVING ABOUT THIS GIANT GUIDE!

Now YOU Can Be a "Cracker-jack" at Auto Repairs!

BRAND-NEW EDITION!



Thousands of Easy-to-Follow Step-by-Step Pictures

COVERS 800 MODELS—ALL THESE MAKES!

Buick
Cadillac
Chevrolet
Chrysler
Crosley
De Soto
Dodge
Ford
Frazer
Henry J.
Hudson
Kaiser
Lafayette
La Salle
Lincoln
Mercury
Nash
Nash Rambler
Oldsmobile
Packard
Plymouth
Pontiac
Studebaker
Terraplane
Willys

ALSO complete tune-up adjustments for: American Bantam, Auburn, Austin, Cord, Graham, Hupmobile, Pierce Arrow, Reo.

USED BY U.S. ARMED FORCES

Easy-Step-by-Step Instructions Show How to do ANY Job on ANY Car—from 1935 through 1951

THOUSANDS of men are raving about MoToR's BIG NEW FULLY ILLUSTRATED AUTO REPAIR MANUAL! It enables them to do *any* job FASTER and better; do MORE jobs; make MORE money!

Whether it's on a 16-year-old "jaloppy" or a brand-new 1951 beauty, YOU, too, can "breeze through" *any* repair job quickly, easily, right! Just look up the make, model, and job in the quick index—and *go to it!*

Everything You Need to Know to Repair Any Car!

This BIG NEW REVISED edition has MORE REPAIR INFORMATION THAN EVER—right up to the minute! 771 big pages. 2300 "This-Is-How" pictures—clear drawings, diagrams, cut-away photos that lead you every step of the way. Over 200 "Quick-Check" charts containing more than 38,000 essential repair specifications. Over 225,000 service and repair facts. Clear, simple directions. You *can't* go wrong!

Any man—even a green beginner—can do a good job. If you're a top-notch mechanic, you'll find yourself tackling jobs now that you wouldn't touch before!

Earn More Money! Win Greater Prestige!

The editors of MoToR's Manual have put together the "Know-How" from over 150 *Official Factory Shop Manuals*; "boiled it down" into one handy book!

Includes ALL Automatic Transmissions and Semi-Automatic Transmissions. Covers the new GM Rochester Carburetor, Engines . . . Chokes . . . Carburetors . . . Fuel Pumps . . . Hydramatic Drives . . . Overdrives . . . Oil Filters . . . Starting Motors . . . Generators . . . Distributors . . . Clutches . . . Universals . . . Axles . . . Brakes . . . Steering Gears . . . Shock Absorbers, etc.

Valuable help in Body Service. Factory Specifications and Adjustment Tables. Tune-up Charts. Tables of Measurements and Clearances. Overhauling and Replacement Facts—AND MUCH, MUCH MORE.

Used by Armed Forces, hundreds of thousands of auto service men! YOU'LL want it, too, once you see its 771 giant pages—almost a foot high!—its 2300 close-up pictures! Try it on the following UNCONDITIONAL GUARANTEE:

Try Book for a Week FREE

Send No Money. Pay nothing to postman. Test book in your own garage or shop. *It's GUARANTEED to pay for itself in 7 days.* If it doesn't, just return the book, and owe nothing. You don't risk a penny. Rush coupon for your free-trial copy of this great money-saving Manual. MoToR Book Dept., Desk 3D, 250 West 55th St., New York 19, N. Y.

MOTOR'S AUTO REPAIR MANUAL

SEND NO MONEY! TRY BOOK FOR A WEEK FREE!

MAIL COUPON NOW FOR 7-DAY FREE TRIAL

MoToR Book Dept., Desk 3D,
250 West 55th Street, New York 19, N. Y.

Rush to me at once: (Check box opposite book you want)

☐ **MoToR's New AUTO REPAIR MANUAL.** If O.K. I will remit $1 in 7 days (plus 35c delivery charge), then $2 monthly for 2 months, and a final payment of 95c a month later. Otherwise I will return book postpaid in 7 days. *(Foreign price, remit $8 cash with order.)*

☐ **MoToR's New TRUCK AND TRACTOR REPAIR MANUAL.** (Described at left.) If O.K. I will remit $2 in 7 days, and $2 monthly for 3 months, plus 35c delivery charge with final payment. Otherwise I will return book promptly. *(Foreign price, remit $10 cash with order.)*

Print Name ----------Age---

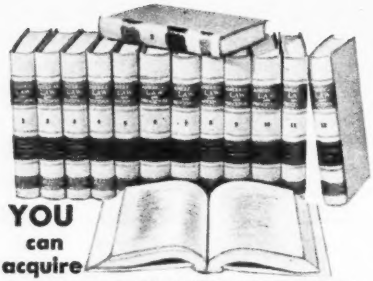
Print Address ----------

City & Zone No. ---------- State----------

☐ **SAVE 35c delivery charges** by enclosing WITH COUPON check or money order for full payment of $5.95 for Auto Repair Manual (or $8.00 for Truck and Tractor Manual). Same 7-day return-for-refund privilege applies.

Same FREE 7-Day Offer on MoToR's Latest TRUCK and TRACTOR REPAIR MANUAL

Covers EVERY job on EVERY gasoline-powered truck and farm tractor made from 1936 thru 1951! Over 1400 pictures. 925 big 8½x11-inch pages, 300,000 facts. Used by Armed Forces. All types Gasoline Engines, Fuel Systems, Governors, Lubrication Systems, Ignition Systems, Starters, Generators, Clutches, Transmissions, Axles, Torque Dividers, Transfer Cases, Brakes, Steering, etc. Check proper box in coupon for free trial.



YOU can acquire

LAW NIGHTS AT HOME! L.L.B. DEGREE

LaSalle's famous Law Library—used as reference in many Law libraries and Law offices—has enabled thousands to master Law surprisingly fast, in spare hours at home, for business and professional advancement.

These 14 remarkable volumes, compiled by leading professors and lawyers, cover the whole basic field of Law in condensed, orderly, simplified manner.

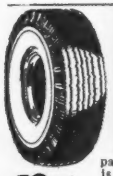
You advance rapidly with this great library, plus special lectures furnished. We guide you step-by-step with personalized Problem Method of instruction . . . you *learn by doing*—handling legal problems—not by memorizing rules.

Send for two FREE 48-page booklets, "Law Training for Leadership," and "Evidence," answering questions about Law and its value to you, and telling how LaSalle Law graduates are winning rapid advancement in business and public life. Mail coupon below. No obligation.

LA SALLE EXTENSION UNIVERSITY
A Correspondence Institution
417 S. Dearborn St. Dept. 4493L Chicago 5, ILL.

Send me your two FREE booklets described above, without obligation.

*Name*_____ *Age*_____
*Street*_____
*City, Zone & State*_____



THE MOST AMAZING OFFER IN USED TIRE HISTORY. EVERY PASSENGER TIRE

UNCONDITIONALLY GUARANTEED

plus TIRE INSURANCE FREE

Here's DOUBLE proof that we bear the loss if your passenger tire wears out within the guarantee period or is damaged in any way (except willfully). Don't take risks: we send FREE insurance certificate PLUS written unconditional guarantee with your order.

10% OFF ON TWO OR MORE TIRES

TRIPLE INSPECTED PASSENGER TIRES
UNCONDITIONAL ONE YEAR GUARANTEE plus TIRE INSURANCE FREE

600-16	$5.39	700-16	$7.59	700-15	$5.59	550-16	$5.95
600-16 (6)	6.50	600-15	5.59	750-16	12.25	550-17	5.75
650-16	5.79	650-15	5.59	550-15	5.59	475-19	5.75
640-15	5.95	710-15	6.50	820-15	7.50	760-16	7.75
670-15	5.95	760-15	6.75	670-16	6.95		

MUD AND SNOW TIRES
TWO YEAR WRITTEN GUARANTEE

600-16	$6.95	900-16	$12.95	750-20	Regular $12.50	Special	$15.95
650-16	7.50	650-16 (6)	9.50	650-15	6.50		

EXTRA VALUE TRUCK TIRES
ONE YEAR WRITTEN GUARANTEE

800-20	$10.75	750-20	$14.50	825-20	$21.50	1100-20	$28.95
850-20	11.75	32x6 (8)	11.75	900-20	19.50	1100-22	24.50
700-20	12.50	32x6 (10)	12.50	1000-20	20.00	750-20 (10)	18.00

Complete line of High Mileage Tires in stock. Write for price list for sizes not listed. Take off 10% on orders for two or more tires. Remember - - every passenger tire unconditionally guaranteed PLUS TIRE INSURANCE FREE.

MAIL ORDERS PROMPTLY FILLED. Send check or money order with this ad.

THE SAFTYRE CO.
"FOR THAT SAFE TIRE"
Dept. MI, 920 W. Cary St., P. O. Box 2254, Richmond, Va.

Invention Clinic

[*Continued from page* 20]

ment. For example, in 1915 Benjamin P. Fortin's patent was assigned to the Underwood Typewriter Company. This related to a key-operated eraser so arranged that it could be vibrated vertically across the printed zone. We never have seen it applied.

What Will Succeed?

There is not the slightest doubt but that a good typewriter erasing system would meet with instant approval if it will make a good, clean erasure, can be simply operated either with an extra key or by finger pressure and can be fitted in some way to the machine or held at the desired position. •

INVENTORS

Before you make any effort to market your invention, you should take the first steps toward proceeding for patent protection.

I shall be pleased to furnish you with information relative to patent procedure upon request from you, and this will be without any obligation on your part.

PATRICK D. BEAVERS
Registered Patent Attorney
923 Columbian Building Washington 1, D. C.

PATENTS
C. A. SNOW & CO.
REGISTERED PATENT ATTORNEYS
WRITE FOR INFORMATION TO
427 SNOW BUILDING, WASHINGTON 1, D. C.

INVENTORS

Send for PATENT INFORMATION Book and INVENTOR'S RECORD without obligation

GUSTAVE MILLER
42MI Warner Building
Washington 4, D.C.

REGISTERED PATENT ATTORNEY
Patent Attorney & Advisor
U. S. NAVY DEPT. 1930-'47
ASSOCIATE EXAMINER
U. S. PAT. OFF. 1922-1929
PATENT LAWYER

INVENTORS

Send today for "Patent Protection for Inventors" outlining preliminary steps to take toward patent protection, also convenient "Evidence of Invention" Form.

VICTOR J. EVANS & CO.
750-D Merlin Building • Washington 6, D.C.

WE TEACH YOU... ALL INSTRUCTIONS FREE!

We'll show you how to **EARN**

BIG MONEY IN PLASTICS

without tools or machinery!

A NEW HOME INDUSTRY

NEVER BEFORE has such a **GREAT OPPORTUNITY** like this been offered! The **CHANCE OF A LIFETIME!** The chance to learn and **START** a new, fascinating and **HIGHLY PROFITABLE** business of your own! We have started **THOUSANDS** of ambitious people in this wonderful and thrilling new business because the work is so easy and pleasant (many turn it into a profitable hobby), requires only a **FEW** dollars investment, can be started **ANYWHERE** by **ANYONE** . . . at home, garage, basement, den, shop, etc. and most important, **WITHOUT TOOLS OR MACHINERY** you can produce in **QUANTITY** exceptionally attractive and desirable plastic things of such great variety and usefulness beyond your imagination! All this valuable knowledge and instruction is yours **FREE** . . . we teach you, help you get started and buy part of your production! We also help you obtain DEFENSE WORK!

MAKE ANYTHING

This new method of creating unlimited quantities of useful things without machinery is **CASTING** . . . the extremely simple process of pouring liquid plastics into molds; *the entire method is as easy as pouring water out of a glass!* No machinery or tools required! In a few minutes the liquid turns into a beautiful solid, hard, durable, colorful or transparent plastic in the form of Jewelry, Novelties, Gadgets of every shape and form, Machine Parts, Fishing Lures, Bookends, Cig. Lighters, Tools, Dies, Handles, Knobs, Pensets, Figurines, Souvenirs, Toys, Dolls, Baby Shoes . . . **A THOUSAND USEFUL THINGS!** Some of our plastics are transparent and sparkling clear, ideal for imbedding flowers, photos, curios, etc. Others are like beautiful Ivory, Ebony, Marble, Ceramics, etc. The field is really **UNLIMITED.** Practically anything your imagination can create can be **CAST** with our plastics, one or a thousand!

BILLIONS FOR DEFENSE

The government has started the greatest defense program in history! **BILLIONS** are being spent! Our liquid plastics can be used in **THOUSANDS** of vital defense applications. With our catalog we will include instructions how **YOU** can obtain defense work, how **YOU** can take part in this tremendous program to insure the future of America! A grand opportunity to combine patriotism and profit! A grand opportunity of obtaining THOUSANDS OF DOLLARS of defense work!

1000 OPPORTUNITIES

Regardless what you are doing now you can get into the **CASTING BUSINESS** in your spare time or evenings; we assure you, once you do, you will be eagerly devoting all of your time to this very easy, fascinating and **HIGHLY PROFITABLE** business. Countless letters from enthusiastic busy **PLASTICAST** users testify to successful businesses developed as a result of answering this ad! **BUT LET US PROVE IT:** send only 25c for our big 48 page catalog of Casting Materials, Molds, etc. We will also send you, absolutely **FREE**, an attractive **CASTING** to show you what can be done with our plastics in a few minutes! IN ADDITION, we will also send you a valuable instruction book giving details on the **ART & BUSINESS OF CASTING!** Yes, all this for only 25c, but write for it today . . . *this may be the lucky coin that will start the most fascinating and profitable phase of your life!* Don't delay anything that can mean so much to your future—write today.

PLASTICAST CO. (Dept. H) (Write to nearest address) P.O. Box 987, Palo Alto, Calif. P.O. Box 6737, Chicago 80, Ill.

Canadian Customers: Send 35c for catalog to Canadian Ind. Plastics, 1056½ W. Pender St., Vancouver, B. C.

FREE

LEARN MEAT CUTTING AT NATIONAL

Pay After Graduation

NOW—train in JUST 8 WEEKS at famous National School for a big-pay job with a SECURE future in the dependable trade of Meat Cutting, Meat Merchandising and Self Service Meats.

Be an expert Meat Cutter, Market Manager, Supervisor and *make an experts pay.* Get a profitable market OF YOUR OWN. Unlimited opportunities in this vital, nationwide field.

You learn easily, quickly the National Way. You have your own tools and meat to work with. Expert instructors show you how. You get actual, practical experience right here in our big, modern school where we have been training top meat men *for nearly 30 years.*

Cutting, percentage, pricing, advertising, selling, buying, A COMPLETE RETAIL MEAT EDUCATION. Diploma. FREE employment help. Thousands of successful graduates.

TRAIN NOW—PAY LATER

Get your training NOW. Pay tuition in easy installments *after you graduate.* We'll help you get a job, if you need it, to help pay your expenses while at school.

If you want to BE A SUCCESS—*have a secure future*—send coupon AT ONCE for our big 52-page school catalog showing students in training and telling about our LEARN BY DOING method. Read letters from graduates. GET ALL THE FACTS. No obligation. You have everything to gain. Paste coupon on postcard or mail in envelope TODAY.

National School of Meat Cutting, Inc., Dept. 52-D, Toledo 4, Ohio

Send me your FREE school catalog on National Training at Toledo in Meat Cutting, Meat Merchandising and Self Service Meats. No obligation. No salesman will call.

Name .....

Address .....

City ..... State .....

GROW Living MIDGET TREES!

EARN $10.00 PER HOUR!

- AT HOME
- IN SPARE TIME
- NO EXPERIENCE NEEDED

It's new! Amazing! At last, the secret of growing miniature (MING) trees can be yours. FULL GROWN, dwarf trees — only a few inches high. Beautiful miniature fir, orange, oak, Chinese elm, peach, pine, cypress—any kind! ALL BLOOM and even BEAR FRUIT. All perfect healthy specimens — but miniature in size! Make costly home decorations and expensive centerpieces. (SOLD FOR OVER $1,500 EACH) Big demand. Costs only pennies — takes only minutes per week. IT'S EASY! Fun! A new fascinating hobby — a new fabulous $$$$ business.

Send for free secret plan details.

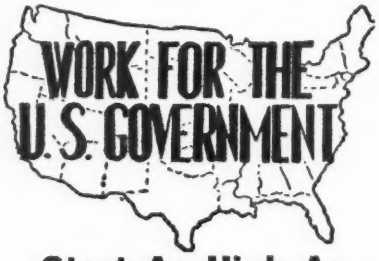
HELP US FILL HUGE DEMAND!

These trees are being demanded by STORES CLUBS • HOTELS • FLORISTS • HOUSEWIVES • INTERIOR DECORATORS • COLLECTORS • HOBBYISTS — A Big Money Opportunity FOR YOU.

FREE! FASCINATING PROFIT PLAN

NATIONAL NURSERIES, Dept T-4
8620 South Ruthelen Avenue
Los Angeles 47, California
Rush me FREE plan IMMEDIATELY!

Name _____
Address _____ Zone _____
City _____ State _____



Start As High As $3,795.00 A YEAR

MEN—WOMEN

- Postoffice Clerks-Carriers
- Railway Postal Clerks
- Stenographers
- Accountants
- Immigrant Inspectors
- Typists
- Customs Inspectors
- Many Other Early Jobs

Veterans Get Preference

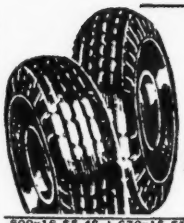
MAIL COUPON TODAY SURE

COUPON

FRANKLIN INSTITUTE
(Not Government Controlled)
Dept. G-77,
Rochester 4, N. Y.

Gentlemen: Rush to me, FREE of charge, list of U. S. Government big pay jobs. Send FREE 32-page book describing salaries, vacations, hours, work, etc. Tell me how to qualify for one of these jobs.

Name .....
Street .....
City ..... Age? .....



TUBE GIVEN WITH EACH PASS. & TRUCK TIRE

18 MONTHS WRITTEN GUARANTEE
Sent with Every Tire You Buy

SEND THIS AD IF YOU WANT discount on every tire.

10% OFF SAVE TIME SAVE MONEY

GOOD USED TIRES "Not recapped."

18 YEARS AT THIS ADDRESS

600x16 $5.48	670x15 $5.86	710x15 $6.46	760x18 $7.36
650x15 5.48	700x15 5.46	750x16 7.86	820x15 7.36
650x16 5.66	700x16 7.26	760x15 6.66	670x16 6.46
640x15 5.66	550x17 5.66	475x19 5.66	550x18 5.66

600x20 $9.96	32x6 (10) $12.26	1000x20 $19.96	
650x20 11.56	750x16(8) 10.96	1100x20 22.96	
700x20 12.36	825x20 20.56	1000x22 22.96	
750x20 14.26	900x20 19.36	1100x22 23.96	

Thousands of tires shipped all over U. S. A. All tires shipped F.O.B. Phila. Send Check or M.O. with this ad. Dept. 6.

STANDARD, 834 N. Broad St., Philadelphia 30, Pa.

SEND FOR THIS FREE!

Make money. Know how to break and train horses. *Write today for this book FREE*, together with special offer of a course in Animal Breeding. If you are interested in Gaiting and Riding the saddle horse check here ( ) *Do it today—now.*

BEERY SCHOOL OF HORSEMANSHIP
Dept. 1154-D Pleasant Hill, Ohio

ITALIAN ACCORDIONS

All types, all models. Very best. Hand Made. Fully guaranteed. Buy direct from Factory representative at lowest wholesale prices and Save Money. Also Button Accordions, Chromatic Accordions and Concertinas. We take any instruments in trade. Send name and Address for FREE catalog.

ITALIAN ACCORDION MFG. CO.
7600 Cottage Grove Ave., Dept. MI-4, Chicago 19, Ill.

UNLIMITED OPPORTUNITIES IN ENGINEERING

BACHELOR OF SCIENCE DEGREE IN 27 MONTHS in Mech., Civil, Elect., Chem., Aero, Radio (Telev.) Engineering; Bus. Adm., Acct. Extensive campus, well equipped buildings and labs. Low cost. Prep. courses. Personalized instruction. Big demand for graduates. Serious shortage of engineers. Prepare now for the opportunities ahead. Founded 1884. World wide enrollment. Enter June, Sept., Jan., March. Write for Catalog.

TRI-STATE COLLEGE
622 College Ave., Angola, Indiana

COLT FRONTIER REVOLVERS

"LOW" PRICES

ALL NEW CATALOG #2

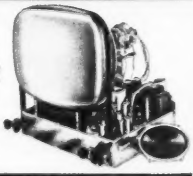
Over ONE HUNDRED COLT FRONTIER Model Revolvers in Stock. Complete line of Holsters, Parts, Ammo, etc.

SEND 50c FOR BEAUTIFUL ALL NEW UP-TO-DATE CATALOG. Price of Catalog applied on first purchase

HY HUNTER, Rm. 20, 5666 W. 3rd St. Los Angeles 36, Calif.

THE FINEST TELEVISION CHASSIS

- R.C.A. Lic. 630 Super Set
- The most powerful receiver
- Keyed A.G.C.
- Includes 12" Concert speaker
- Chassis assembled ready to play



Picture tubes at lowest prices
Assemble complete set in ½ hour
Terms 20 down—balance COD—FOB N. Y.

179.50 *less Picture Tube*

QUEENS ELECTRONIC CO.
P.O. Box 184, Oakland Gardens 64, New York

AIRBORNE SALES ♦ WAR SURPLUS AND OTHER BARGAINS ♦ SAVE UP TO 90%

D.C. GENERATORS

Finest aircraft quality . . . heavy duty . . . lifetime grease-sealed ball bearings. Terrific for truck and marine use, for welders, plating, D. C. Appliances, lights, etc.

Type P-1. Mfd. by Ford, General Electric, Westinghouse & Delco-Remy. Rated 200 Amps., 28 Volts, 2500 RPM., can be "revved" up to 300 Amps. Shpg. Wt. 53 lbs. Approx. Govt. Cost $350 . . . New to you.....$21.50

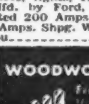
WILLARD WET PLATE BATTERY

Extra-long life, rechargeable battery. 2 V., 20 Amps. Great for portable radios, mobile units, bell circuits, alarm systems, rural telephones, Strobo bulbs, etc. Only 5" high. Visible ball float hydrometer built in Lucite case. Shipped dry (wt. 3½ lbs.) . . . any battery service will supply standard battery electrolyte. Used singly or in multiples. ALL NEW! Now only $1.95 ea.

HIGH SPEED DRILLS All new fractional & numbered. Orig. value $18! Nationally known brand. Assorted sizes. Set of 30, $3.50

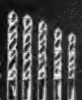
WOODWORKERS DRILLS

From 3/16" to 1/2" with 1/4" shanks. A $12.50 value – NEW – just $2.50 for complete set!



HIGH SPEED STRAIGHT SHANK DRILLS

10 different size H.S. Straight Shank Jobber Length Drills, 1/4" to 1/2" (blank same diameter as drill). $25 value. NEW – $3.50.



HIGH SPEED DRILLS

SET from 1/16" to 27/64" – S. sizes with 1/4" Shanks – NEW – get this $3.00 takes this set!

FIRE EXTINGUISHER. For safety's sake order now! Every home, garage, car, workshop should have this handy fire fighting wonder. It's fully charged (at 1,000 lbs. P.S.I. or more) with that miracle CO^2 (carbon dioxide) chemical that smothers oil, gasoline & electrical fires. Anyone can operate, in a hurry. Heavy ICC approved steel cylinder, valve and 3000 lb. gauge that shows available remaining pressure. REFILL costs very little. Hose included for emergency tire inflator or air blast. Wt. 4 lbs. Approx. Govt. Cost $25. NEW, complete with cloth carrying case, just.....$6.50.

PORTABLE WELDER

Will weld, braze, solder and cut all metals up to 3/16". No experience needed, full instructions included. Weld iron, steel, brass, aluminum and other metals. Plug into any 110 Volt A.C. or D.C. line. Save hundreds of hours and money doing repair work for yourself and others. A great item for any mechanic or hobbyist, etc. Not a toy. Comes complete with electrode and carbon holders and an ample supply of electrodes, carbons, flux and necessary components to do a thorough welding job of any type. This unit can not be duplicated for many times its price. NEW – price $12.00.

DRILL GRINDER Sharpens round, square or tapered drills up to 6" long. Even an amateur mechanic can get a new, factory finish on a drill in 25 seconds. New protractor feature gives every drill sharpening angle, with 5 convenient angles already marked off. Usable with hand or power stone. A brand new development. All new $2.80 ea. Postpaid in U.S.A.

MICROMETERS

Chrome plated, precision engineered, carefully tooled to give long life. All new 0.1" capacity—$2.25 ea 1.2" capacity—$3.50.

RIVET SETS

Universal type, case hardened tips. Set of dies will head up only brazier or round head rivet from 1-1/8" to 1/4". With adapters for air gun or hand use. All new—cost Govt. approx. $27.00. Complete 15 piece set (wt. 2 lbs.).....$5.00.

NEW BIG 1952 CATALOG BARGAINS FOR EVERYONE • SEND 25c FOR YOUR COPY TODAY! ORDER from ad NOW!

Send check, money order or cash 25% deposit required on C.O.D. orders. All prices F.O.B. Culver City, Calif., unless otherwise stated

♦ AIRBORNE SALES CO., INC Dept. MI 452 CULVER CITY, CALIF. ♦ SAVE $$$

If you can draw, your future is secure

America's **12** Most Famous Artists

now test your art talent!

Thousands paid $1.00 to take this amazing test. To meet the ever-increasing demand for artists needed for higher-paying jobs, this talent test is now offered

FREE. Quantity limited. Write today!

This exciting test, printed on 8 large pages of 11" x 14" drawing paper, has over 50 illustrations. It tests you seven ways to show your sense of design, composition, form, observation, imagination, originality and picture sense. Yours if you act today.

FAMOUS ARTISTS COURSE

Studio 5-D, Westport, Connecticut

Without obligation I would be pleased to receive the Famous Artists Talent Test.

Mr.
Mrs.....Age.....
Miss (please print)
Address.....
City.....Zone.....State.....

FREE BOOK AND ACTUAL SAMPLE

Screen Print, Dept. 34
1910 So. Los Angeles St.
Los Angeles 15, California
Dear Mr. Nowak: Please rush me FREE BOOK, ACTUAL SAMPLES, and your amazing new PRINTING PLAN

Name _____
Address _____
City _____ State _____

C. J. NOWAK
General Manager

AT HOME SPARE TIME

IT'S AMAZING! I'll show you how to make up to $12.50 per hour

PRINTING
WITHOUT A PRINTING PRESS

Print all kinds of all kinds
Print Business
Print Fabrics
Print Instruments
Print Signs
FOR SALE

AMAZING NEW COLOR PRINTING METHOD

A fascinating new miracle-way to print—a secret method that lets you print colorful signs, posters, banners, drapes, wallpaper, flags, glass, fabrics ANYTHING without an expensive printing press or costly equipment. This new process is revolutionizing the entire printing industry—it's one of America's fastest-growing businesses—it's your "chance of a lifetime" to make Big Money Now! Be the FIRST in your area to profit. The secret can be yours—just mail the coupon above today!

EASY TO LEARN! NO EXPERIENCE NECESSARY! Simple fascinating method! No artistic ability needed. It's possible for anyone (young or old) to make up to $50 PER WEEK printing in SPARE TIME alone—AT HOME!

START YOUR OWN BUSINESS—BE YOUR OWN BOSS Wouldn't you be happy if you could take only one hour of your time and $1.00 worth of materials and sell your printing for $15 or more. It's that easy! It's amazing! Your home can be your office. No selling because there's a huge demand everywhere. GOVERNMENT CONTRACTS AVAILABLE TO BID. Biggest opportunity in America—costs you nothing to receive all CONFIDENTIAL FACTS—Mail coupon today!

SCREEN-PRINT
1010 S. Los Angeles St., Los Angeles 15, California

YOU CAN PRINT ANYTHING WITH SCREEN PRINT

Amazing New Auto "Trouble-Shooter"

Spots 1760 Car Troubles - In a Jiffy!

MOTOR'S Handy, Pocket-Size Manual Enables You To "Find What's Wrong" Quickly and Easily!

NO more guessing or groping for causes of car ailments! Now you can put your finger on **every** possible cause of car trouble—by turning to indexed check-list in MOTOR'S amazing NEW "TROUBLE-SHOOTER"!

For example, if car has **Fan Belt Noise**, just turn to that section and you find EIGHT specific things that can cause it. In the same way, no matter **what** is wrong, this handy manual checks through 1760 possible causes in a jiffy! Covers engines, clutches, brakes, ignition, axles, battery, starting motor, springs, shock absorbers, steering wheels, tires, transmissions, etc. Section on **automatic transmissions** alone is worth price of book. Saves time, work, headaches. A "must" for beginner or veteran mechanic. Handy spiral binding; stays open while you work.

ONLY $1

SEND NO MONEY

Mail coupon now, pay postman only $1 (plus postage, C.O.D. charges). If not satisfied, return book in 7 days for refund.

MOTOR Book Dept., Box CT
250 West 55th St., New York 19, N. Y.

Rush me MOTOR'S NEW "TROUBLE-SHOOTER." I will pay postman $1, plus C.O.D. charges. If not satisfied, I will return book in 7 days for refund.

Name _____
Address _____
City _____ Zone ___ State _____

SAVE POSTAGE. C.O.D. CHARGES—Enclose $1 WITH coupon. Then We pay shipping charges. Same return-refund privilege.

SEWS LEATHER AND TOUGH TEXTILES

Tough sewing jobs made easy with SPEEDY STITCHER Automatic Awl. Sews firm, even lock-stitches like machine. No skill needed to sew, repair Harness, Luggage, Boots, Sports-Gear, Overalls, Rugs, Sails, Awnings, or anything of leather, canvas, other tough materials. Specially made for heavy-duty. Handiest tool you'll ever own. Saves many times its small cost. Complete with reel of strong waxed-thread, set of diamond-pointed needles, easy-to-follow directions. Save money by sending $1.50—we pay postage. If C.O.D., postage extra. MONEY BACK GUARANTEE.

ONLY $1.50 Postpaid

SPORTSMAN'S POST 90
26 E. 46 St., New York 17

LAW FREE BOOK

THE LAW TRAINED MAN

Your FREE copy of "The Law-Trained Man" shows how to gain prestige and greater earnings through Blackstone home law study. All instruction material furnished including 17-volume Law Library written by 65 well-known law authorities. Lawyers, judges among our graduates. LL.B. degree. Low cost; easy terms. Write today.

BLACKSTONE COLLEGE OF LAW 225 N. Michigan Ave. Dept. 64, Chicago 1, Ill.

A Correspondence Institution Founded in 1890

REAL ESTATE
BE A BROKER

PAYS BIG! SEND FOR FREE, BIG, ILLUSTRATED CATALOG NOW! No obligation. Graduates report making substantial incomes. Start and run **your own business quickly.** Men, women of all ages, learn easily. Course covers Sales, Property Management, Appraising, Loans, Mortgages, and related subjects. **STUDY AT HOME** or in our classrooms in big cities. Diploma awarded. G.I. approved. Nationally known.

FREE BOOK TELLS HOW

WEAVER SCHOOL OF REAL ESTATE
Suite 300 Law Bldg. Dept. 1M Kansas City, Mo.

GROW MINIATURE TREES
FOR PROFIT & PLEASURE

Fabulous Money-Real Fun! Grow *genuine live* dwarf (Ming) trees. A terrific new business and hobby. Astounding details Free. Write —

DWARF TREES, Dept. 29
P. O. Box 355, Briggs Station
Los Angeles 48, Calif.

REMOTE CONTROL for "THE THING"!! (PLUS $1.00 BOOK FREE)

$5.50

A completely wired, 3 tube (less tubes) remote control unit, originally used as **Electronic Brain** for remote thermostatic control of electric blankets. Can be used, with slight modifications, to control model trains, planes, trucks, remote on-off for radios, open and close garage doors from your car, or to remotely control any device in accordance with your own ingenuity. FREE with each purchase of "THE THING," one copy of Gernsback Library's popular new book "Model Control by Radio." 112 pages, containing more than 125 illustrations, diagrams, tables and formulas. Shipping Wgt. 3 lbs. incl. cir. dia.

ALL FOR ONLY _____ **$5.50**

Niagara Radio Supply Corp., 160A Greenwich St., New York 6, N. Y.

FALSE TEETH

That Loosen Need Not Embarrass

Many wearers of false teeth have suffered real embarrassment because their plate dropped, slipped or wobbled at just the wrong time. Do not live in fear of this happening to you. Just sprinkle a little FASTEETH, the **alkaline** (non-acid) powder, on your plates. Holds false teeth more firmly, so they feel more comfortable. Does not sour. Checks "plate odor" (denture breath). Get FASTEETH at any drug store.

Dear Editor—

[*Continued from page 22*]

At War With McCahill

As an auto expert I think McCahill is fine but as an historian. . . .

In his French Renault story on page 82 in the February MI he said "the great French taxi fleet . . . stopped Von Hindenburg from reaching Paris in World War I." That's quite inaccurate.

At this time (September 1914), Hindenburg was busy licking the Russians in East Prussia and he was not in command of the German armies in their drive on Paris. Von Kluck and Von Bulow were commanding.

Loren L. Butler, II
Holden, Wash.

Thanks, we're busting Tom to pfc.

More Faces On Walls

In regard to the letter from Mrs. Mosher in the February letters column about the strange faces she sees on the walls—finally I have found someone who has seen Them. Their faces used to materialize on my walls, too. After about four years They got knives and started trying to hack me up in little chunks. Dr. Williams made Them put away Their knives and now They chase me with little baseball bats instead. Wait till she starts seeing the *handwriting* on the wall.

Ima P. Nutte
Massillon, Ohio

Lonely Hearts Illustrated

In your January letters column a girl wanted to know why you haven't got a lonely hearts page. Why not?

I, too, am somewhat lonely for the opposite sex. I am 33 years old and have yet to have my first date, kiss, etc. It's true. . . I've never had a date. I just don't know how to meet girls. MI could do me a great service by having a lonely hearts column. Can I expect to see one soon?

William Crandell
Address Withheld

No.

[*Continued on page 31*]

Can You Name This "OLD-TIMER?"

It's A Rare Antique—One of 16 In Our Miniature Collection of ¾" Scale Model Auto Sets . . . !

What Fun to Build—And What A Grand Hobby For Everyone 9 to 90!

THE MARCH ISSUE of this magazine featured the "**MI Old Automobile Contest**" which many have entered. If you did, your interest in old cars should go beyond just naming them—**BUILD THEM** in authentic scale for your den or whoopee room! They're 6" to 10½" in length when completed. They come pre-fabricated with all ready-shaped parts, plastic cast-wheels, lamps, radiator, horn, etc. Authentic history with each car; also step-by-step instructions that a 10-year old can follow with ease! At toy, hobby and dept. stores. Nationally known; guaranteed money back if not satisfied. Start now—order a **COMPLETE SET!**

1909 Stanley Steamer—$2.95

1903 Model "A" Ford—$2.50

We illustrate a few of the 16 in our collection—the "mystery" antique is in the list below. Which one is it?

1904 Olds—$1.95

1911 Maxwell—$2.50

- ☐ 1910 T Ford $2.50
- ☐ 1909 T Ford $2.95
- ☐ 1903 Rambler .$2.50
- ☐ 1914 Stutz Bearcat ..$3.95
- ☐ 1913 Mercer Raceabout $3.95
- ☐ 1906 "Old 16" Locomobile $3.95
- ☐ 1911 Buick "Bug" ..$2.50
- ☐ 1902 Franklin $2.50
- ☐ 1906 Columbia Electric..$2.50
- ☐ 1910 Internat. Harvester $2.95
- ☐ 1900 Packard..$2.50
- ☐ 1903 Cadillac..$2.50

Write to us. Add 25c for postage and handling. No C.O.D.'s, please.

hudson miniatures OLD TIMERS

"Originators of Antique Autos in Miniature"

SCRANTON HOBBY CENTER, Dept. 2 Scranton 10, Pa.

OWN Your Own Business

PATENTED PORTABLE EQUIPMENT

$5 per hour

Clean and Mothproof rugs and upholstery "in the home" or public buildings. If now employed, you can operate in spare time and build up a permanent profitable full-time business. Alert dealers can average $5 hourly gross profit on service they render and $3 on **EACH** of their servicemen at National Price Guide charges. Easy to learn . . quickly established.

DURACLEAN cleans by absorption! No scrubbing, soaking or shrinkage. Dirt and grease vanish . . matted pile rises . . colors revive. Furnishings used again same day.

DURAPROOF resists moths and carpet beetles. Your service backed by a National Money Back 4 Year Warranty.

We furnish enough material to return your total investment in war-proof business. EASY TERMS. Send for **FREE** booklet TODAY.

Duraclean Co., 2-174 Duraclean Bldg., Deerfield, Ill.

LEARN TO MOUNT BIRDS

ANIMALS, FISH, PETS

Be a Taxidermist. Save your hunting TROPHIES. Have a fine home-museum. Hunters, save and **MOUNT** your beautiful DUCKS, QUAIL, DEER, TAN skins, FURS. **Great Fun.** Spare-time **PROFITS.**

FREE BOOK Tells ALL about it. 100 fine wild-game pictures, 48 pages. SEND TODAY, don't delay. Get this WONDERFUL **FREE BOOK**, MEN AND BOYS. Learn Taxidermy. Double your hunting pleasure. Rush letter or **POSTAL** today. **STATE YOUR AGE.**

N. W. SCHOOL OF TAXIDERMY, Dept. 2404, Omaha, Nebraska

Watch Repairing Pays Big Money Learn at home

Watch repairers in great demand. Train step-by-step in 10 easy lessons. We furnish all tools and 15 jewel watch and practice movement. Turn spare time into cash. A licensed school. Low cost. Send for FREE book today.

ILLINOIS SCHOOL OF WATCH REPAIRING

2870 Elston Ave., Dept. MI-42, Chicago 18, Ill.

ELECTRICAL BOOKS shipped for EXAMINATION

8 BIG BOOKS

SEND NO MONEY

APPLIED ELECTRICITY INCLUDING RADIO AND REFRIGERATION

Here's great news for anyone interested in Electricity. NEW, up-to-date 19th Edition of Applied Electricity with new subjects fully covered, including blueprint reading, electronics, F. M. radio, fluorescent lighting. 8 Big Books sent for examination!

NEW Edition for Beginners and Experts

Over 3700 pages, 2700 illustrations and 134 tables in most complete electrical work we have published. Dynamos, motors, diesel plants, power stations, transmission—everything explained for easy understanding.

BIG FIELD! Big Demand! Big Pay!

Men who understand electricity are needed now in all kinds of industries. Practically every business depends on electrical knowledge, and men who know this subject make big money. Learn easily with these new, interesting books. Send coupon for a set of books on approval. See how they will help you to get ahead faster.

SEND NOW [A year's consulting privileges with our engineers now given to all buyers of this famous Cyclopedia of Electricity.]

AMERICAN TECHNICAL SOCIETY —Publishers Since 1898

AMERICAN TECHNICAL SOCIETY—Publishers Since 1898
Dept. E4320, Drexel Ave. at 58th St., Chicago 37, Ill.

I would like to examine your 8-Volume Set of Electrical Books. I will pay the delivery charges only, but if I choose I may return them express collect. If after 10 days' use I prefer to keep them, I will send you $3 and pay the balance at the rate of only $4 a month until $34.80 has been paid. Include consulting service as offered above.

Name _____

Address _____

City _____ State _____

Please attach letter giving employer's name and address (if self-employed give business man reference). Men in service please give home address.

Apache THROWING TOMAHAWK

Balanced to stick

$2.98

An ancient Indian weapon for killing game-target sport. Easy to throw with our clear instructions. Splits a 2" board at 30'. Will stick from any angle

Rare Souvenir!

Beautiful heavy duty 14" tomahawk. Solid tempered steel. Unusual bargain, limited supply. Sold direct only. Send $2.98 today to

TECHRITE CORP., Box 12H South Pasadena, Calif.

TEST YOUR OWN RADIO AND TELEVISION TUBES AT HOME!!!

Pat. Pending

ALSO AVAILABLE! CONDENSER TESTER Checks Shorted, Open and Leaky Condensers.....**$7.98**

CONDUCTANCE TUBE TESTER

No Tube Manual or knowledge of tubes necessary—Tests **All** Tubes—100% accurate for direct shorts, opens, burned out tubes.

ONLY **$4.98** Buy it—Try it—If not satisfied, return in 5 days—Money cheerfully refunded.

SEND $1.00 and pay balance, plus charges on delivery. Send check, cash or money order and we pay postage.

E-Z TESTER CO.
(Dept. M.I.) MACON, GA.

Dear Editor—

[*Continued from page* 29]

Four-Wheel Pressure Gauge

As far as I am aware, I have a unique instrument on the dashboard of my car. It is square in shape and 4 by 4 inches in size. At each corner within the instrument is a smaller device much like an ordinary thermometer in appearance but which registers the air pressure of a tire of the car. Thus, the upper left hand gauge registers the air pressure of the front left tire, the upper right gauge registers the pressure of the front right tire, etc. In the center of the instrument is a small light bulb which flashes a red signal when either one of the four air gauges falls below the 13-pound mark. I have found the instrument has perfect accuracy.

How I provide constant and direct contact between a gauge on an instrument panel and the air in the tire of a fast-turning tire is my secret and I have no intention of disclosing it at this time.

Has any reader heard of a similar unit?

G. R. Levesque
Falher, Alberta, Can.

[*Continued on page* 35]

Here's how to make sure you never miss a copy of MECHANIX ILLUSTRATED, the science, crafts and hobbies magazine that has everything:

Please enter my Subscription to MECHANIX ILLUSTRATED

☐ One year: $1.80

☐ Two years: $3.50

☐ New Order ☐ Re-order

In Canada & Pan-America . 1 yr. $2.40
Other Foreign Countries . . 1 yr. $3.15

NAME ..... ADDRESS .....

CITY ..... ZONE ..... STATE .....

Mail to: MECHANIX ILLUSTRATED, Circulation Dept., Fawcett Building, Greenwich, Conn.

The 97 Pound Weakling

who became "The World's Most Perfectly Developed Man"

"I'll Prove that YOU, too, can be a NEW MAN!"

Charles Atlas

I KNOW, myself, what it means to have the kind of body that people pity! You wouldn't know it to look at me now, but I was once a skinny weakling who weighed only 97 lbs.! I was ashamed to strip for sports or for a swim. I was such a poor specimen that I was constantly self-conscious and embarrassed. I felt only HALF-ALIVE.

Then I discovered *"Dynamic Tension."* It gave me a body that won for me the title "World's Most Perfectly Developed Man."

When I say I can make you over into a man of giant power and energy, I know what I'm talking about. I've seen my new system, *"Dynamic Tension,"* transform hundreds of weak, puny men into Atlas Champions.

Only 15 Minutes a Day

Do you want broad shoulders—a powerful chest—biceps like steel—arms and legs rippling with muscular strength—a stomach with sinewy muscle—a build you can be proud of?

No "ifs," "ands," or "maybes." Just tell me where you want handsome, powerful muscles. Are you fat and flabby? Or skinny and gawky? Are you short-winded, pepless? Do you let others walk off with the prettiest girls, best jobs, etc.? Then write for details about *"Dynamic Tension"* and learn how I can make you a healthy, confident, powerful HE-MAN.

"Dynamic Tension" is an entirely NATURAL method. Only 15 minutes of your spare time daily is enough to show amazing results—and it's actually fun! *"Dynamic Tension"* does the work. And *you'll* be using the method which many great athletes use for keeping in condition—prize fighters, wrestlers, baseball and football players, etc.

FREE My 32-Page Illustrated Book Yours—Not $1 or 10c—But FREE

Send NOW for my famous book, "Everlasting Health and Strength." 32 pages, packed from cover to cover with actual photographs and valuable advice. Shows what *"Dynamic Tension"* can do, answers many vital questions. Page by page it shows what I can do for YOU.

This book is a *real prize* for any fellow who wants a better build. Yet I'll send you a copy absolutely FREE. Just glancing through it may be the turning point in your whole life! Rush the coupon to me personally: **Charles Atlas, Dept. 6R, 115 East 23rd St., New York 10, N.Y.**

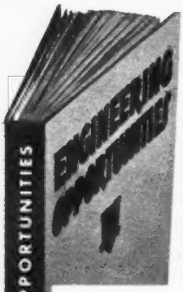
CHARLES ATLAS, Dept. 6R
115 East 23rd St., New York 10, N. Y.

Send me—absolutely FREE—a copy of your famous book, "Everlasting Health and Strength"—32 pages, crammed with actual photographs, answers to vital health questions, and valuable advice to every man who wants a better build. I understand this book is mine to keep, and sending for it does not obligate me in any way.

Name ..... Age .....
(Please print or write plainly)
Address .....
City ..... State .....

THIS HANDBOOK FOR AMBITIOUS MEN

FREE!



Have you had your copy?

150 pages of guidance to best-paid positions. Up-to-the-minute information for men who want to climb to the top. Tells how to get promotion, security and better pay through home study courses. This handbook "Engineering Opportunities" is free and entirely without obligation. Send the coupon. Make this your big year! Decribes over ninety courses including:

Mechanical Eng.	Electrical	A.F.R.Ae.S.
Aeronautical	Radio	A.M.I.C.E.
Television	Automobile	B.S. (Pure
Building	A.M.I.Mech.E.	Science)

--- SEND COUPON TODAY ---

Canadian Institute of Science & Technology Limited, 538 Century Building, 412, 5th Street, N.W., Washington, D.C.

Please forward free of cost or obligation your handbook, "ENGINEERING OPPORTUNITIES".

Name .....

Address .....

Course interested in ..... Age .....

Canadian address: Canadian Institute of Science 538 Garden Bldg., 263 Adelaide St. W., Toronto 1

BECOME AN EXPERT IN TRAFFIC

Traffic men earn $4,000 to $10,000 and up. Thousands of firms need experts on rates, tariffs, regulations. We train you thoroly in spare time at home for executive traffic jobs. Personal training under traffic authorities. Placement counsel and help. Write for free 48-page book "Traffic Management—the Fast Growing Profession."

LASALLE Extension University, 417 So. Dearborn St.
A Correspondence Institution Dept. 4493T Chicago 5, Ill.

PRESTO! ANYONE CAN MASTER GLAZE

Car Owners! Meet Master Glaze—the sensationally different luster for new and used cars! Not a wax—not an oil polish—not a paint!—nothing that "smears" over the surface.

MASTER GLAZE is a unique discovery—a creamy liquid—quick and easy to apply! Gives a hard, glass-like surface. Even gasoline cannot dull it! Lasts six months to a year! Amazing luster—beautiful, sparkling clean and brilliant! Doesn't finger-mark—doesn't smear! A match box full glazes an entire car. Seals the pores—protects! NOTHING LIKE IT!

AGENTS
An unusual opportunity! Quick, flashy demonstrator. Big profits. Good territory. Write today!

FREE SAMPLE

Just send your name and address to

MASTER GLAZE CO., 7720-743 W. Harwood Ave., Milwaukee, Wis.

LEOPARD 2.95 EACH

SATIN-LIKE "RICH-TONE" DESIGN

Auto Seat Covers

TERRIFIC VALUE! New, deluxe **RICH-TONE** material looks like **LEOPARD FUR**, gives beauty and distinction to your car. Adds new life to old, worn interiors. Protects new car upholstery against wear, dust, grime, stains, grease, bad weather. Tough, durable, resists cracking! Handsome tailored appearance. For **ALL** cars, **ALL** years, **ALL** makes and models. **NO pins! No tacks! No sewing!** Ingenious **SNAP-TITE** feature. Just **SNAP** on or off in a **JIFFY!** Best of all: they're only **2.95** for front or rear seat.

SPECIAL! Pair for front and rear, only **4.95**. Send no money. Pay price plus postage on delivery or send check or money order for free delivery and **SAVE!** Mention car make, model & year; also if front seat is full front or **SPLIT** coupe front. **Try 10 days at our risk!** Guaranteed to satisfy or money back! **RUSH!**

CONSUMERS MART, Dept. 100-150
131 West 33rd St., New York 1, N. Y.

BORNEO HUNTING BLOWGUN

Most accurate native weapon ever devised! For killing game self-defense-target skill. Silent and very powerful. ***GUARANTEED TO GO THROUGH ¼" PLYWOOD!*** Kills without poison. Darts go right through rabbits, squirrels, etc. ***5 Foot Long Heavy Duty Hunting Model***

$4.98 Postpaid

Extra darts 6 for $1

This is an amazing weapon. American sportsmen who first try it cannot believe their eyes—so accurate and powerful is this blowgun. Average person can hit a 2" bullseye at 30 ft. almost every time. Shoots over 300 ft. Precision made ½" bore. Blue steel. Beautiful finish. Comes with six 5" steel hunting darts, target, instructions. Limited quantity. Sold direct only. Send 4.98 to **WHOLESALE IMPORT CO.**, Dept. 8N, 604 S. Marengo, Alhambra, Calif.

High School Course at Home

Many Finish in 2 Years

Go as rapidly as your time and abilities permit. Course equivalent to resident school work — prepares for college entrance exams. Standard H. S. texts supplied. Diploma. Credit for H. S. subjects already completed. Single subjects if desired. High school education is very important for advancement in business and industry and socially. Don't be handicapped all your life. Be a High School graduate. Start your training now. Free Bulletin on request. No obligation.

American School, Dept. H428, Drexel at 58th, Chicago 37

☆ HE-MAN VOICE!

STRENGTHEN *your* voice this tested *scientific* way. Yes—you may now be able to improve the POWER of your speaking and singing voice . . . in the privacy of your own room! Self-training lessons, mostly silent. No music required.

FREE BOOK Write TODAY for Eugene Feuchtinger's great booklet "How to Develop a Successful Voice." It's absolutely FREE! You must state your age. Booklet mailed postpaid in plain wrapper. No salesman will call. Send your name and age RIGHT NOW! **Prefect Voice Institute, 210 S. Clinton St., Studio D-3, Chicago 6, Ill.**

BRITISH COMMANDO KNIFE

$3.00

postpaid, complete with original leather sheath (for belt and boot)

Official Issue
"FAIRBAIRN FIGHTING KNIFE"

Ideal gift for the service man. Collector's item. Authentic World War II souvenir. Each knife marked, "Made in Sheffield, England." The actual knife used by British Commandos and U. S. Rangers in hand-to-hand combat. Blade, 7". Overall, 12". The most beautiful knife of World War II. Brand new original blueing may be used as a letter opener. Send Check, Cash or Money Order Postpaid, $3.00. For domestic and overseas airmail, add 80¢ per knife. California residents add 3% state tax. Dealers inquire.

PASADENA FIREARMS CO., Dept. 15
972 East Colorado Street Pasadena 1, California

The NEW Model 50 UTILITY TESTER

FOR REPAIRING ALL ELECTRICAL APPLIANCES-MOTORS

an all-around electrical trouble shooter

- Measures A.C. and D.C. Voltages, A.C. and D.C. Current, Resistances, etc.
- Will measure the current consumption while the appliance under test is in operation. The appliance or utility may be plugged directly into the front panel receptacle. A special pair of insulated clip-end leads is included for motors, etc.
- Incorporates a sensitive direct-reading resistance range which will accurately measure all resistances commonly used in electrical appliances, motors, etc. This range will enable continuity checks and tests for shorts and opens.
- Will test thermostats, radio tube filaments, bulbs, fuses, fluorescents, condensers, switches, field coils, circuit breakers, lighting systems, etc.

Handsome round cornered molded bakelite case 3⅛" x 5⅞" x 2¼". Complete with all test leads and instructions.

$13.90

SOLD ON EASY PAYMENTS AT THE NET CASH PRICE

No interest or carrying charges added. Simply remit $3.90 with order, pay balance, $2.00 per month for 5 months.

SUPERIOR ELECTRONIC CO., INC.
Dept. B-61 • 227 FULTON STREET • NEW YORK 7, N. Y.

I HELPED T.E.H. MAKE $14 A DAY WHILE STILL LEARNING!

T. E. H.—West Virginia. "By the time I finished half your course, I was making $14.00 per day. I have made enough on the side to more than pay for the course."

H. T. ARMSTRONG

Learn ELECTRIC APPLIANCE REPAIR & SERVICE

WE TEACH:
How to Repair
Washing Machines
Vacuum Cleaners
Electric Ranges
Lamps, Motors,
Irons, etc.;
REFRIGERATION
and
House Wiring
At Home
In Your
Spare Time!

For a man handy with tools, and happiest when working with his hands, OPPORTUNITY is Wide Open Today in this great and growing field. Everyone is a customer for the man trained to service electric appliances.

Open Your Own Shop

Our practical HOME COURSE teaches you this business from A to Z—preparing you to take a well paid job or open your own shop. You can actually start in your basement or garage with the tools we send you . . . before finishing.

We Include An ELECTRICAL APPLIANCE TESTER A Big Kit of Tools at NO EXTRA COST

MAIL THIS COUPON for FREE BOOK

H. T. ARMSTRONG
PACIFIC TRAINING SCHOOLS
7217 So. Broadway, Dept. M-524, Los Angeles 3, Calif.
Dear Sirs: Please send me, without obligation, your free booklet and complete details.

Name_____
Address_____
City_____ Zone____ State_____

If you like to draw

WHETHER YOU'RE 14 OR 40
make money with your brush and pen! If you like to draw, sketch or paint, take the Free Talent Test. No fee. No obligation. Mail this coupon TODAY!

ART INSTRUCTION, INC.
Dept. 4062 • 500 S. 4th St., Minneapolis 15, Minn.
Please send me your FREE Talent Test. (PLEASE PRINT)

Name_____ Age____
Address_____ Phone_____
City_____ Zone____ County_____
State_____ Occupation_____

Start a Business in Your Backyard

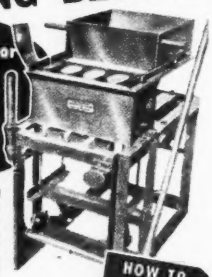
Earn BIG MONEY MAKING BUILDING BLOCKS

General Concrete Vibrator BLOCK MACHINE

CAPACITY 1000 BLOCKS A DAY

Only $218 LESS MOTOR F.O.B. PLANT

SHIPPING WEIGHT 400 LBS.



Here is a business you can start on small capital—in your own backyard—that earns 100 to 150% profit, with unlimited opportunities. Make concrete or cinder blocks. Millions used for homes, factories, public buildings, garages. Sell all you make to building trade. Do it with a General—and you're headed for success.

1000 BLOCKS A DAY

The General is a high speed, power-driven block machine at amazingly low cost. Rugged all-steel construction. Simple to operate indoors or outdoors. Makes superior 3 core type block meeting all code requirements. Produces up to 1000 blocks per day. Full operating instructions and mixing formulas supplied. Write for FREE details.

Dealer inquiries invited

Wonderful Book Written & Illustrated by Experts

HOW TO BUILD YOUR OWN CONCRETE BLOCK HOME Only $1 Prepaid

GENERAL ENGINES CO.

DEPT. 1-42 • 307 HUNTER ST. • GLOUCESTER, N. J.

Includes floor plans for 6 beautiful, easy to build concrete block bungalows. Shows ways to save money. How to lay blocks, lay out building lines, mix concrete, build steps, porches and concrete floors. Mail coupon at once with $1.

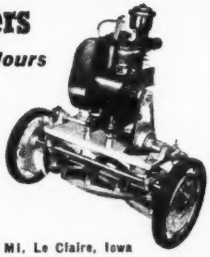
Name.....

Address.....

City.....Zone...State.....

Convert Hand Mowers to Power Mowers

Takes Less Than 3 Hours



The Handy-Dandy Lawn Mower Kit fits any hand mower from the 16 to the 20 inch size. Complete with all necessary parts. Kits can be purchased separately, complete with engines or complete with Pennsylvania mower.

Also manufacturers of complete power mowers and garden cultivators.

LE CLAIRE MFG. CO., Dept. MI, Le Claire, Iowa

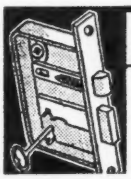
CARBURETOR TOO RICH MAKES MOTORIST TOO POOR

Car owners who are wasting money and not getting proper gas mileage due to over-rich mixtures will be pleased to learn how to save gasoline by VACU-MATING over-rich mixtures. VACU-MATIC fits all cars, trucks and tractors. It is *automatic* and operates on the supercharge principle. Easily installed in a few minutes.

SALESMEN WANTED! Big Profits

Send name, address on a postcard for *free particulars* and how to get yours for introducing.

VACU-MATIC CO., 7617-1870 W. State St., WAUWATOSA, WIS.



FIX LOCKS

Learn Locksmithing and Keymaking from Experts in Your Spare Time at Home!

Age or physical handicap no disadvantage. Year-round, steady income in this permanent, respected field. Full or part time. Practical, illustrated lessons show you how to make money even while learning! All materials and special tools supplied. Send for FREE BOOKLET.

LOCK INSTITUTE, Dept. M-27

15 Park Ave. Rutherford, N. J.

Lic. by State of N. J. V.A. Approved

BRAND NEW

30 DAY FREE TRIAL

High Power

BINOCULARS

Finest Precision Optics

Featherlight

Money Back Guarantee

Easy Pay Plan

Leather Case Incl'd.

Free! Catalog & Book "How to Select Binoculars"

Dealer Inquiries Invited

33 MODELS $14.95 up

BUSHNELL *Binoculars*

Bushnell Bldg., Dept. MX44 Pasadena 1, Calif.

TASOPE PHOTO-ENGRAVING PLANTS

MATERIAL COST OF THIS CUT 7½c SELLING PRICE $1.00 AND UP

Establish your own profitable PHOTO-ENGRAVING business. Make cuts for newspapers, printers, and advertisers. Make etched name plates, plaques etc. Instructions furnished, no experience necessary. Sold direct from factory since 1931. First five hundred cuts sold locally or by mail will pay for plant and pay you well for your time. Write for FREE catalog.

TASOPE, DEPT. MI-4 AURORA, MO.

ART OFFERS YOU A PROFITABLE CAREER

TRIAL PLAN reveals talent—proves you can Learn to Draw in Spare Time—at Home!

COMMERCIAL ART, DESIGNING, CARTOONING—all in one complete home study course. Trained Artists are in demand and make good money. No experience necessary. We teach you step by step. Our famous method has trained thousands since 1914. TWO ART OUTFITS included. Low tuition, easy terms.

MAIL COUPON FOR FREE BOOK

WASHINGTON SCHOOL OF ART

Studio 204F, Washington 5, D. C.

Send Free Book, "Art for Pleasure & Profit."

Name..... Age.....

Street.....

City..... Zone.... State....

☐ I am interested in your TRIAL PLAN

FLORIDA

OPPORTUNITY BULLETIN

• The Florida Opportunity Bulletin is an exciting new publication, issued on the 1st & 15th each month and listing hundreds of job openings, business opportunities, farms, groves, city lots, homes, etc. All important areas of the "Sunshine" State covered—Jacksonville, Tampa, Miami. Detailed reports in each issue on employment, trade, real estate. New business & industries are reported, giving names, locations, etc. No other publication like it. Of vital importance in helping you find the right job . . . buy the right business, farm, grove or home. Let the BULLETIN be your gateway to opportunity, health & happiness. Send only $1.00 cash, check or money order today for trial subscription next 5 big issues.

Trial Subscription 5 Issues $1.00

Satisfaction guaranteed. If not delighted on receipt of first issue your $1 will be promptly refunded. Act now!

FLORIDA OPPORTUNITY BULLETIN

Box 539-PA, MIAMI BEACH, FLA.

Dear Editor—

[*Continued from page* 31]

Long John Versus Short Snort

I object to something you printed in Cold Facts on Keeping Warm (February '52, page 70). You said that alcohol in your system may act to protect you against freezing like anti-freeze acts in autos.

That is obviously sly propaganda spread by liquor interests to trick innocent people into imbibing.

Let me tell you, there's nothing like a pair of old-fashioned woolen drawers.

Elsa Greentree Elsinge
Portland, Me.

DOUBLE ARC MOTION

Doubles

SANDING ACTION!

Four reasons why new Syncro No. 504 is your best sander buy: (1) tremendous increase in power, (2) exclusive Double Arc Motion combines best features of orbital, straight-line sanding that DOUBLES sanding action, (3) light for easy vertical or overhead work, (4) sanding area approx. 14 sq. in.! SYNCRO gives a satin-smooth, high gloss finish. Ideal for polishing, too. COMPLETE with new BUILT-IN Reactance Type Electric Motor, 10 sand-papers, lamb's wool and fabric polish pads, $19.95 at dealers or postpaid. Deluxe No. 504 in metal carrying case, $22.95. (Dealers, Jobbers—write!)

SYNCRO ELECTRIC SANDER

SYNCRO CORPORATION, Dept. W-42, Oxford, Michigan

Learn Profitable Profession in 90 days at Home

MEN AND WOMEN, 18 TO 60

Swedish Massage graduates make big money working full or spare time with doctors or in hospitals, health resorts, sanatoriums, clubs, private practice. A dignified, interesting career! Qualify for your graduation certificate. Thorough instruction at home as in class rooms. Write for Illustrated Book—FREE!

THE COLLEGE OF SWEDISH MASSAGE
Dept. 258D, 41 E. Pearson, Chicago 11

Please send free booklet and anatomy charts.

Name .....

City ..... State ..... Age ....

LOW FACTORY PRICES

Let Us Put This NEW 1952

MIDWEST TELEVISION or RADIO

In Your Home on 30 DAYS TRIAL

Mammoth 20-INCH Rectangular PICTURE

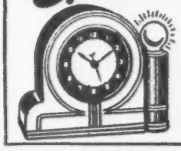
EASY TERMS

You be the judge! See and hear Midwest Television in your own home. You must be 100% satisfied or your money back. Send for 1952 Catalog of the finest Midwest line in 32 years.

FACTORY-TO-YOU Low Factory Prices.

WE PAY TRANSPORTATION CHARGES.

Special Bonus Gift!



Illuminated TELEVISION CLOCK

Given With Every Purchase of a MIDWEST RADIO or TELEVISION

LIMITED TIME ONLY!

Phone For FREE 1952 MIDWEST CATALOG

IN NEW YORK MUrray Hill 2-6810 IN CHICAGO STate 2-5600
IN CLEVELAND PRospect 1-7450 IN PITTSBURGH GRant 1-0609
IN DETROIT WOodward 3-1233 IN ST. LOUIS GRand 1161
IN PHILADELPHIA LOcust 4-1035 ... or send coupon below

SEND THIS COUPON For FREE MIDWEST 1952 Catalog

MIDWEST RADIO & TELEVISION CORP.
Dept. 419 909 Broadway, Cincinnati 2, Ohio

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

THE NEW MODEL TV-11

TUBE TESTER

SPECIFICATIONS

- Uses the new self-cleaning Lever Action Switches for individual element testing. Because all elements are numbered according to pin-number in the RMA base numbering system, the user can instantly identify which element is under test. Tubes having tapped filaments and tubes with filaments terminating in more than one pin are truly tested with the Model TV-11 as any of the pins may be placed in the neutral position when necessary.
- The Model TV-11 does not use any combination type sockets. Instead individual sockets are used for each type of tube. Thus it is impossible to damage a tube by inserting it in the wrong socket.
- Free-moving built-in roll chart provides complete data for all tubes.
- Phono Jack on front panel for plugging in either phones or external amplifier will detect microphonic tubes or noise due to faulty elements and loose external connections.

Operates on 105-130 Volt 60 Cycles A.C. Hand-rubbed oak cabinet complete with portable cover. $47.50

SOLD ON EASY PAYMENTS AT THE NET CASH PRICE

No interest or carrying charges added. Simply remit $11.50 with order, pay balance $6.00 per month for 6 months.

MOSS ELECTRONIC DIST. CO., INC.
Dept. B-22 38 Murray St. New York 7, N. Y.

Build Your Career! Become an

Electrical Engineer

☆ Major in Electronics or Power

☆ B. S. Degree in 36 Months

Military, practical or academic training evaluated for advanced credit. Train in 6 to 18 months for Radio, Television, Air Conditioning, Heating, Refrigeration, Welding. 48,000 former students. A non-profit school. Write for free pictorial booklet, "Your Career." State course interest. If veteran, mention date of discharge.

MILWAUKEE SCHOOL OF ENGINEERING
MI-452 N. Broadway, Milwaukee, Wisconsin

No Experience Needed To

PRINT YOUR OWN POST CARDS

The GEM STENCIL DUPLICATOR saves money . . . gets results quickly! Hundreds of uses for every type of business and organization. We ship the GEM complete with all supplies, Guide Board for accurate printing and 60-page Book of Ideas at the special low price of only **$8.50** (a $15 value)

FREE TRIAL OFFER *Our 21st Year*

Use the GEM **FREE** at our expense! SEND NO MONEY. Write and complete GEM outfit will be sent you postpaid. After ten days, send us only **$8.50** or return the GEM. You must be satisfied!

BOND EQUIPMENT CO. Dept. 41
6633 Enright • St. Louis 5, Mo.

Do you use just your thinking mind? If you do, you are missing 90 per cent of your possibilities. Those occasional hunches are the urges of a vast sleeping force in your inner mind. Learn to develop and direct it. Push obstacles aside and master life with an energy you have overlooked. Send for FREE SEALED BOOK. It tells how to obtain these teachings. Address: Scribe E.V.W.

The ROSICRUCIANS
SAN JOSE (AMORC) CALIFORNIA

IS $210.00 A WEEK

Worth a Post Card to You?

Then *rush* post card with name and address. Get FREE details of amazing full-and-spare-time PROFITS made by ambitious men handling new Automatic Defroster for refrigerators on FREE TRIAL basis. Learn how the housewives hand you BIG PROFITS when you just plug in the D-Frost-O-Matic to end defrosting mess, forever. Send post card for SPECIAL OFFER *TODAY!*

D-FROST-O-MATIC
173 W. Madison St., Dept. G-3. Chicago 2, Ill.

SPORTONE MUFFLERS

Ford & Chevrolet	$ 4.45
All other popular cars	5.45
V-8 Dual Sets	15.95
Chromed Silentips	2.95

(Please state make & year of car on all orders.)

SANDEE MUFFLER CO.
5643 Corryne Place • Culver City, California

AMAZING NEW TINY RADIO

FITS IN YOUR POCKET — REALLY WORKS

NO TUBES, BATTERIES OR ELECTRIC AC HOOKUPS NEEDED! HAS V.H.F. CRYSTAL DIODE—EZ TUNING DIAL—Red plastic cabinet—Clearstone phone. GUARANTEED TO WORK MOST ANYWHERE YOU GO ON LOCAL STATIONS. Should last for years! **SEND $1.00** (bill, ck, mo) and pay postman $3.99 COD postage or send $4.99 for p.p. delivery. LIMITED TIME OFFER—INCLUDES DX AERIAL KIT! REAL FUN—Wonderful gifts. SOLD ONLY BY MAIL FROM

MIDWAY CO. Dept. BMI-4 Kearney, Nebr.

U. S. OIL LEASES PAY OFF

FIND WHAT YOU CAN DO FOR - - $200.

Congress has given any U. S. citizen the right to file for oil leases on certain public lands. Some U. S. oil leases have lately paid $150,000 for under $200; $250,000 for $250; $137,000 yearly for $200. We locate you a lease in a possible oil area. Scores of our clients have sold U. S. leases we obtained for them to major oil companies, keeping part of the oil for themselves. In California the estimated oil under 40 acres of OIL LAND is 2 million barrels. That is why you have a chance at enormous returns by risking $200. Write Dept. MI for free booklet.

CALIFORNIA LEASE CO.
7075 HOLLYWOOD BLVD. LOS ANGELES 28, CALIF.

SEE THE HAMILTON ROSS DEALER IN YOUR COMMUNITY

SEE THE H-R DEALER IN YOUR COMMUNITY

AMAZING Hamilton Ross HEAVY DUTY ELECTRIC

All Metal SPRAY GUN

$12.95

75¢ A WEEK

AT NO EXTRA COST

THIS 232 PAGE HOME FIX-IT MANUAL

Used by U.S. Navy & Leading Industrial Mfgs.

101 USES FOR HOME & SHOP

Sprays: paints, enamels, lacquers, varnishes, shellacs, insecticides, etc! All metal — precision built — heavy duty motor—leak proof. Rugged yet light in weight. Designed so well that a child can use and clean it. Don't delay —mail the handy coupon today.

SAVES YOU TIME & MONEY

- Paint porches, closets, ice boxes, furniture, etc.
- Insect control
- Moth protection
- Car touch-up

ORDER OUR GREATEST VALUE TODAY

HAMILTON ROSS INDUSTRIES CO.
Box No. 7140, Chicago 80, Ill.

PLEASE RUSH ME YOUR ALL METAL SPRAY GUN

☐ I enclose $12.95 ☐ check or ☐ money order as full payment. No postage or carrying charges.

☐ Enclosed is $2.00 down payment. I agree to pay 75¢ a week on the balance after receiving spray gun from my local HR dealer. Small credit service charge.

First Name _____ Husband _____ Wife _____

Last Name _____

Address _____ Apt. _____

City _____ Zone ____ State _____

(credit orders only)

Employer's Name _____

Employer's Address _____

MI 352

Allow 2 weeks for delivery of mail orders.

HAMILTON ROSS INDUSTRIES CO.
Box No. 7140, Chicago 80, Ill.

MAIL COUPON TODAY

IT'S FUN TO FINISH FURNITURE WITH NEW—

Transveneer PLASTIC FILM VENEER

REPRODUCTIONS OF BEAUTIFUL WOOD GRAINS

Transveneer makes any smooth surface look exactly like the most beautiful wood! Easily applied film-like sheets cover wood, metal, composition board, glass. Many patterns available. *SPECIAL TRIAL OFFER!* 16"x24" *Transveneer* sheet in beautiful Mahogany grain, Welding Solution, Squeegee, full Instructions —all for only $1.00 postpaid. Money back guarantee. Order today! Sorry, no C.O.D.'s.

SPECIAL TRIAL OFFER! 1.00 Postpaid

MAIL COUPON NOW!

TRANSVENEER DIVISION, DI-NOC COMPANY
Dept. A-11 Public Sq. Bldg., Cleveland 13, Ohio
Enclosed is $1.00. Please send Transveneer, Welding Solution, Squeegee and Instructions.

Name _____

Address _____

City _____ Zone ____ State _____

Offer good for limited time only. Offer good only in Continental U. S.

PREPARE FOR BETTER JOB, BIGGER PAY IN SPARE TIME AT HOME

Today, choose the job you want—and prepare for it in time you might otherwise waste. Or if you are already in the work you like best, start training now for quicker promotion and increased pay. During more than 50 years AMERICAN SCHOOL has helped ambitious people to reach higher goals. Check subject that interests you and mail coupon for full information.

AMERICAN SCHOOL, Dept. G428, Drexel at 58th, Chicago 37, Ill.
Without obligation, please send FREE and postpaid, full particulars about the subject checked below.

☐ Accounting
☐ Air Conditioning
☐ Architecture & Building
☐ Automotive Technician
☐ Baker Foremanship
☐ Bookkeeping
☐ Business Management
☐ Contracting
☐ Diesel Technician

☐ Drafting—Building Trades
☐ Drafting—Machine Trades
☐ Electrical Engineering
☐ Electricity—Practical
☐ Electronics—Industrial
☐ High School Courses
☐ Machine Shop Operations
☐ Mathematics & Slide Rule
☐ Mechanical Engineering

☐ Plastics Engineering
☐ Plumbing—Practical
☐ Private Secretary
☐ Refrigeration
☐ Retail Merchandising
☐ Sales Management
☐ Sheet Metal Work
☐ Tool Making

NAME _____ OCCUPATION _____ AGE _____
HOME ADDRESS _____
CITY _____ STATE _____

MAIL COUPON NOW

The Cleanest, Coolest Shaves of Your Life!
Brand-New, Precision-Made A.C.

ELECTRIC RAZOR

Only $4.95

DOUBLY GUARANTEED!

TRY IT—without risking 1¢—for 30 DAYS ON YOUR OWN BEARD!

Say "goodbye and good riddance" to old-fashioned shaving methods! Start shaving the STERLING ELECTRIC way and enjoy the cleanest, coolest, smoothest, most-comfortable shaves of your life. Toughest whiskers come off clean as a whistle . . . and FAST! The STERLING mows 'em down like magic! Yes, here's every advantage of electric shaving at an incredible low price . . . only $4.95 complete. You'll save the entire low cost in a few months in blades and shaving cream *you don't buy!* Not a toy, not a gadget. Far from it! Precision-made. Looks, handles, performs like razors costing 3, 4 and 5 times more! Look at these "expensive razor" features . .

- 4 precision shaving heads!
- Hollow-ground cutting blades!
- Blades honed in special diamond-honing compound!
- Automatic safety guide-bar.
- Powerful 60-cycle motor.
- Cutting blades chrome plated for lifetime service.
- AND MORE! Handsome white plastic case, 6 ft. extension cord, self-starting, self-sharpening, self-lubricating . . . all for the incredible low $4.95 price . . . and DOUBLY GUARANTEED!

YOU DON'T RISK A PENNY TO TRY IT!
Make us prove it! Send for the Sterling today. When it arrives use it on your own beard for 30 days. If you don't agree that the Sterling is the shaving value of all time, return it for an immediate, no-questions-asked refund. If you keep it, you're protected for ONE YEAR by our written guarantee against mechanical defect. Rush your order. Quantities limited. Send only $1.00. Pay postman $3.95 plus 70c postage on delivery. Or send $4.95 with order and we ship postage paid! LADIES—NOTE: the Sterling shaves underarms, legs smooth and fast. You'll love it!

MODERN MERCHANDISE CO.
169 W. Madison St., Dept. 578, Chicago 2, Ill.

BOOST YOUR EARNING POWER WITH

DIESEL

Train Now For This Big Pay Trade!

Are you mechanically inclined? **Then you'll like DIESEL!** You'll like working on these modern engines . . . pulling down the big pay of DIESEL-TRAINED men. Train at home for Diesel opportunities with simple, practical DEI Training. Learn DIESEL engine operation, fuel systems, repairs, maintenance PLUS Scientific Motor Tune-up. Course includes shop training in our big, well-equipped shops, working on Diesel engines. Write now for FREE booklet!

UTILITIES ENGINEERING INSTITUTE (Founded 1927)
2521 Sheffield Avenue, Dept. DJ-14, Chicago 14, Illinois

MAKE EXTRA MONEY

PLASTICS

LEARN AT HOME

There are RICH OPPORTUNITIES for MEN and WOMEN with "know-how" in Plastics. Interstate's amazing new Plastics course tells and shows how to make hundreds of fast selling items out of Plastics. Gives complete training in fabrication, casting, lamination, molding, etc., in simple, easy, step-by-step language and pictures.

START A PLASTICS BUSINESS OF YOUR OWN. No other industry holds such promise for the future. You can make big money manufacturing novelties, toys, signs, etc., in your own home in spare or full time. Don't wait! Learn NOW how Interstate's Plastics Training qualifies you for success in the plastics field.

Write for FREE Information Today!

INTERSTATE TRAINING SERVICE
School of Plastics, Dept. C-4D
Portland 13, Oregon

CAN I, AT MY AGE, BECOME A HOTEL EXECUTIVE?

YES!

"Recently I took over the 'Y' cafe and am my own boss."—W. Hall

YES!

"Now Ass't Mgr. Lewis Training did it all."—N. Davis

The success of Lewis Graduates proves you can qualify for fascinating hotel and club field and essential defense housing and cafeteria positions. Opportunities everywhere for both young and mature. Previous experience proved unnecessary. Train in spare time at home. Nation-wide Placement Service FREE of extra charge. Write for FREE book, "Your Big Opportunity."

LEWIS HOTEL TRAINING SCHOOL
Desk VT-4103, Washington 7, D. C.
36th year

Write Today for FREE BOOK

Malayan THROWING DAGGER

BALANCED TO STICK! $1.98 Postpaid

This MALAYAN FIGHTING KNIFE is used for self-defense, killing game, target skill. Powerful, silent, accurate weapon. Splits 1" board at 30 ft.

Fun, Thrills, Excitement!

Indoors—outdoors Learn this Sport! Easy to throw accurately with our clear instructions. Beautiful, heavy-duty 10" knife. Tempered steel. Tough, rawhide-bound handle. Rare souvenir, unusual bargain. Limited quantity. At dealers or send $1.98

WHOLESALE IMPORT CO Dept N, 604 Morengo, Alhambra, Calif.

How to Make Money with Simple Cartoons

A book everyone who likes to draw should have. It is free; no obligation. Simply address FREE BOOK

CARTOONISTS' EXCHANGE
Dept. 354D, Pleasant Hill, Ohio

BOYS! MAKE YOUR OWN RADIO

Make your own simple, tubeless, batteryless Crystal Radio. SEND 25c for a GENUINE MELOMITE CRYSTAL with complete illustrated instructions for making your own set. Crystal sent postpaid with instructions and our own publication, "THE MAGIC CRYSTAL" which is full of news, diagrams, questions and answers of interest.

SEND 25c FOR YOUR CRYSTAL TODAY!

ALVA ALLEN RADIO Dept. MI-4 Clinton, Mo.

MASTER MIND!

Learn Short-Cut Mathematics

Juggle figures, do baffling number tricks. Make people gasp at your marvelous lightning-quick mind. Multiply 4 figures by 4 figures without using old-fashioned multiplication! Big cloth-bound volume; fully illustrated course.

Sharpen up Your Brain Power

Includes worked-out problems, answers, etc. Sensational bargain, only $1.95, postpaid or COD plus postage. Satisfaction guaranteed or refund. Order this amazing "Short-Cut Mathematics" today!

NELSON-HALL CO., 210 S. Clinton St. Chicago 6, Ill. Dept. 3D-3

$1.95 Complete

TREASURE! URANIUM!

GEIGER COUNTERS—METAL DETECTORS GEIGER COUNTERS for Uranium. METAL DETECTORS for gold, silver and buried treasure. 5 models from which to choose. We have one in your price range. No finer instruments available anywhere. FREE ILLUSTRATED FOLDERS.

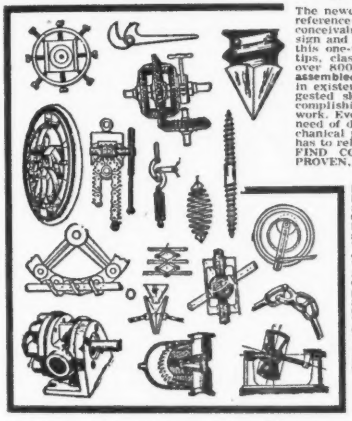
THE Detectron CO. Model DG-7
5631 CAHUENGA, NO. HOLLYWOOD, CALIF.

BRAND NEW! JUST PUBLISHED IN 1952

THE ENGINEERS' ILLUSTRATED THESAURUS

By HERBERT HERKIMER

A Book That Shows You Over 8000 ILLUSTRATIONS AND DESIGNS of Mechanical Movements, Devices, Contrivances and Details



The newest, largest, most comprehensive and useful reference work of its kind ever put together. Every conceivable kind of mechanical motion, machine design and detail is briefly explained and illustrated in this one-volume encyclopedia. Here at your fingertips, classified and arranged for easy reference—are over 8000 illustrations, **the largest collection ever assembled;** and as far as known the only work now in existence which aims to provide side by side suggested sketches of **various methods** in use for accomplishing any particular mechanical movement or work. Every engineer, inventor or mechanic finds the need of devising, simplifying or improving some mechanical process, method or detail. In doing this, he has to rely on memory or experience. HERE HE WILL FIND COUNTLESS SUGGESTIONS, TESTED AND PROVEN, FOR ACCOMPLISHING WHAT HE SEEKS.

PARTIAL CONTENTS

FASTENERS: Anchors, Bolts, Screw and Nut Design Types, Commercial Nuts, etc. Nails and Spikes, Clamps and Locking Devices, Chucks and Grips, Keys and Cotters, Manholes, Hand-holes, Covers, Doors, Riveted and Miscellaneous Joints. ADJUSTING DEVICES, SUPPORTS AND STRUCTURES: Machine Frames and Bedplates, Frames of Welded Design, Girders, Columns and Struts, Bridge Trusses. BASIC MECHANICAL MOVEMENTS: Kinematic Chains, Application of Energy to Machines, Levers, Parallel and Straight-Line Motions, Links and Connecting Rods, Guides and Slides, Cams, Tappets and Wipers, Toothed and Epicyclic Gearing, Rolling Contact and Friction Gearing, Pawls and Ratchets, Shifting and Reversing Gears, Circular and Reciprocating Motion. ELEVATORS, DERRICKS, CRANES, CONVEYORS: Slings, Feeders, Bucket Elevators, Conveyors. TRANSMISSION OF LIQUIDS AND GASES: Reciprocating-Pump and Pump Valves, Packings, Rotary Pumps, Refrigerating Compressors and Valves, Steam Traps and Separators. COMBUSTION: Mechanical Stokers, Vaporizing Oil Burners. PRIME MOVERS: Steam-Engine Valves and Valve Gears, Steam Turbines, Principles of Gas Turbines, Rockets and Jet Propulsion, Diesel-Engine, Hydraulic Turbine, Compressed-Air Power, Sea-Wave Power. TRANSPORTATION: Vehicle Bodies, Undertrames and Trucks. INDUSTRIAL PROCESSES: Weighing, Measuring, Pressure, Speed and Heat Measurements, Crushing and Grinding, Sifting, Screening, Straining, Chopping, Slicing and Mincing Apparatus, Mixers, Washing and Winding Apparatus, Cutting Tools, Sanitation; Water Closets and Septic Tanks. ELECTRICAL APPLIANCES: Static Electricity, Magnetism, Electromagnets, Batteries, Transformers; Induction Coils, Telephones, Measuring Instruments, Generators, Alternating-Current Motors, Direct-Current Motors and Generators, Infrared and Electric Heating, Electromagnetic Apparatus, Inductance and Capacitance, Electron Tubes, Radio Communications Systems, Cathode and X-Ray Tubes. HEATING, COOLING, AND AIR CONDITIONING: Steam, Hot-Water Systems, Radiant Hot-Water, Radiant, Warm-Air Hook-Ups, Unit Heaters, Ventilators, Air Conditioners, Refrigeration Systems.

If you work with machinery of any kind, you need this ENGINEER'S ILLUSTRATED THESAURUS by Herbert Herkimer —580 pages, durably printed and bound in cloth. Price

$6.95

Order by mail. If payment sent with order, we pay postage; or sent c.o.d. plus delivery charges. Money back if not fully satisfied.

HOMECRAFTS, 799 Broadway, Dept. 4B, New York 3, N. Y.

FREE CATALOG!

GENUINE *Diamonds*

from New York's leading **PAWNBROKER**

SAVE 50% and more

Diamonds from un-redeemed loans and dealers' auctions; re-set in smart modern mountings; 10 DAY UNCONDITIONAL MONEY-BACK GUARANTEE. Write for free catalog. Est. 1882, famous for unbeatable bargains. References, your own bank or any mercantile agency.

KASKEL'S Kaskel Bldg., 9 Columbus Ave. New York 23, N. Y. Dept. D-17

Thousands of Top-Pay Jobs now waiting in 14 big fields

FREE! NEW 60-page BOOK

- ☐ TELEVISION
- ☐ AUTOMOTIVE MECHANICS
- ☐ UPHOLSTERING
- ☐ BODY-FENDER REBUILDING
- ☐ DIESEL MECHANICS
- ☐ MECHANICAL DRAFTING
- ☐ BUILDING CONSTRUCTION
- ☐ REFRIGERATION
- ☐ FOREMANSHIP
- ☐ FACTORY MANAGEMENT
- ☐ HIGH SCHOOL
- ☐ PRACTICAL NURSING
- ☐ MODELING
- ☐ MILLINERY

No high pressure—*just plain facts*—in this valuable, 60-page book! It tells where the *better* jobs are—explains *how you can train for them at home* in spare time in just a few months. *These jobs pay high* —up to $125 a week and more—and offer you a chance for independence. Mail coupon for your FREE copy today!

COMMERCIAL TRADES INSTITUTE
1400 Greenleaf, Chicago 26, Dept. B3-4

Name_____ Age____

Address_____

City_____ State____

Build the Best! EASY TO ASSEMBLE **BOAT KITS**

NEW CATALOG

OVER 40 PAGES, INCLUDES ALL YOU NEED TO BUILD YOUR OWN
1 - BOAT KITS—30 MODELS
2 - MARINE HARDWARE
3 - MARINE ENGINES
4 - MARINE CONVERSIONS
5 - PAINTS & COLOR CHARTS

All For Only 35c, SEND COIN TODAY

ROWBOATS 8-10-12-14 FT. $39 up

OUTBOARDS 8 Models 12 to 18 FT.

INBOARDS & CABIN CRUISERS 16 TO 23 FT.

NEW 18 FT. OUTBOARD CABIN CRUISER

FAST VEE BOTTOM HULL SPEEDS UP TO 25 M.P.H. — ROOMY CABIN WITH TOILET, SLEEPS TWO —

U-MAK-IT PRODUCTS

703A-WHITTIER ST. Bronx 59, N. Y. City

OWN BUSINESS

WITH A POTENTIAL MARKET OF 50,000,000 CUSTOMERS

New shop-method, home-training system gives you electrical know-how that used to take years to learn. Learn at home by building valuable testing kits, repairing your own and neighbors' appliances. It is not unusual for appliance repairmen to charge on the basis of $5.00-$6.00 an hour.

FREE ILLUSTRATED BOOK

Shows you how you learn every phase of electrical appliance. How to make money while you learn. Write today for your FREE copy.

CHRISTY TRADES SCHOOL
Dept. D-406 4432 North Kedzie Ave. Chicago 25

GO PLACES

LEARN ANOTHER LANGUAGE EASILY — QUICKLY by LINGUAPHONE

IN 20 MINUTES A DAY

World's-Standard CONVERSATIONAL METHOD

FRENCH
SPANISH
GERMAN
RUSSIAN
CHINESE
—any of 29 Languages

Are interesting job, travel, armed services', cultural opportunities passing you by because you speak only one tongue? Learn another language **AT HOME**—quickly, naturally by LINGUAPHONE CONVERSATIONAL METHOD. **YOU LISTEN**—you hear native men and women speak—you understand—**YOU SPEAK**. World-wide educational endorsement: over a million home-study students. **FREE BOOK** gives fascinating facts. **WRITE TODAY!** Approved for **VETERANS'** Training.

LINGUAPHONE INSTITUTE
6704 Radio City New York 20, N. Y.

WESTERN GUNS

WINCHESTER 73 $24.95 UP

COLT FRONTIER $59.95 UP

COLT ARMY (CAP & BALL) $29.95 UP

LARGE SELECTION—LOW PRICES

Complete Stock of Western Weapons and Accessories

Colt Frontier Revolvers • Colt Cap & Ball Revolvers • Winchester Frontier Rifles • Swords • Saddles • Holsters • Cartridge Belts Powder Flasks • Ammo • Grips • Etc.

Send $1.00 for Illustrated Collectors Catalog

Gives Complete Details & Prices on all Items
Catalog Price Deducted from First Purchase

WESTERN GUNS Rm. 17, 7517 Melrose Ave., Hollywood 46, Calif.

LEATHER PRICES ARE LOWER at TANDY'S

MAKE YOUR OWN *Texas Style*

tandy

BAGS—BILLFOLDS 'GATOR-STEER GRAIN LEATHER

33c SQ. FT.

SEND FOR FREE LEATHER PRICE LIST

SEND FOR **FREE** 48 PAGE LEATHER-CRAFT **CATALOG**

TANDY LEATHER CO. P. O. Box 791-BN Ft. Worth, Tex.

16 STORES TO SERVE YOU

WE SELL FOR LESS SINCE 1919

WHAM-O SPORTSMAN * $1.50 POSTPAID 35-LB. PULL!

HITS LIKE A .22 RIFLE—KILLS RABBITS, SQUIRRELS. Powerful, silent, accurate For hunting, target, routing pests. *Sportsmen's choice sold world over!*

HUNTING SLINGSHOT

Heavy duty 7" ash stock. 40 steel balls, extra rubber, target. GUARANTEED. At dealers, or send $1.50 to **Wham-O Mfg. Co.** Box 8N, South Pasadena, Calif.

* **Professional model of Nat'l Slingshot Assn.**

BATTERIES START A FACTORY AT HOME

—and re-cast junk batteries into new, with and without new materials; the latest achievement. We supply complete instructions and everything needed. Large daily profits.

BATTERY LABORATORY SCHOOL
DEPT. MI, MINNEAPOLIS 4, MINNESOTA

Bar Bells

Buy Direct From Factory $8.95 up

Approved and Recommended by Karl Koberle. (Foremost Ex-Army Instructor on Weight Training.)

Write for free booklet and price list.

INDEPENDENT IRON WORKS
2416 East 23rd Street, Dept. X3, Los Angeles 58, Calif.

WARN HUB CAP MAKES 2 JEEPS OUT OF 1

Ends front wheel drag on 4-wheel drive Willys Station Wagons, Pick-ups and Jeeps

Saves gas up to 5 miles per gallon, tire wear, front axles, increases speed and power. Stops shimmy—front wheels coast out of gear! 4-wheel drive handles, performs, climbs like 2-wheel. Install or remove WARN HUB CAPS in 10 minutes. Polished aluminum, guaranteed. Rush check, M.O., or C.O.D. Write for circular.

$20.00 Prepaid U. S., Canada

WARN MFG. CO., Dept. I, 1625-3rd Ave., Seattle 1, Wash.

DICK TRACY WRIST RADIO

. . . for Kids from 6 to 60 WEAR IT LIKE A WATCH USE IT AS A RADIO!

SHOCKPROOF—SAFE!

One of the most compact sets you've ever seen!

It *really works*. You've seen it in comic strips—now it's available for gift giving. Uses Radar Crystal Detector as developed by U. S. Air Forces. Receives regular AM radio broadcasts. Can be connected with wire for use as telephone system or as extra personal speaker for your home radio. Nothing to wear out or replace. Aerial and ground required for better reception.

$2.98 P.P.

LEOTONE RADIO CO., 65 Dey St., Dept. MI, New York, N.Y.

NOT A KIT—COMPLETELY ASSEMBLED

Use your own gasoline engine or electric motor and save $50.00. This is a self-propelled power mower on which any engine or motor from another piece of equipment may be easily added. 18" 5 blade cutting reel. Permanently lubricated precision ball bearings, V Plex, automatic clutch, heavy 11 ga. steel top plate. 90 day guarantee. Shipped f.o.b. Indianapolis. Send check or money order today! **$49.95**

S-C PRODUCTS COMPANY
Box 5127 (Brightwood Station), Indianapolis 18, Indiana

C. T. C. TRAINING IN
DRAFTING

"Here I am at work making good money as a draftsman. I'm glad I sent the coupon to Chicago Tech for that Free Trial Lesson and found out how easy it is to learn Drafting in spare time at home. Today, I feel secure in my job. What's more, I feel I'm slated for promotion and more pay."

LEARN IN SPARE TIME—AT HOME!
(or at the College in Chicago)

A few hours of pleasant home study every week—that's all. All the tools you need; drawing outfit included. This tested method—developed over 47 years of C.T.C. progress—prepares men quickly for good positions in industry.

FREE INFORMATION — SEND COUPON

To prove to you how easy it is to learn Drafting at home, we will send you this FREE TRIAL LESSON. Mail coupon or send post card today.

CHICAGO TECHNICAL COLLEGE

D-276 Tech Bldg., 2000 S. Michigan Ave., Chicago 16, Illinois
Mail me FREE Lesson with information about big opportunities in DRAFTING.

Name..... Age.....

Address .....

City..... Zone..... State.....

Be Your Own MUSIC Teacher

LEARN AT HOME THIS MONEY-SAVING WAY

Start playing real music by notes RIGHT AWAY—**even if you don't know a single note now!** No boring scales or exercises. No "talent" necessary. Amazingly easy. Only a few cents a lesson. 850,000 students! 54th successful year. Mail postcard for FREE BOOK and Free Lesson-Sample. Mention your favorite instrument. No obligation; no salesman will call.
U. S. SCHOOL OF MUSIC, Studio B 224, Port Washington, N. Y.

FREE BOOK

WALKIE TALKIES $4.99 Set of 2
POCKET SIZE —ELECTRONIC VOICE POWERED

No tubes, batteries, adjustments, license or permit needed! Guaranteed to work anywhere up to ¼ mile with extra wire. Swell for room to room—garage to house, etc! Your own private, talk-listen phone. Not war surplus. Brand new. Guaranteed. Two complete units with wire —READY TO USE!

SEND $1.00 deposit and pay postman $3.99 plus postage charges or send $4.99 for postpaid delivery. Sold ONLY by mail from:
MIDWAY COMPANY, Dept. WMI-4, Kearney, Nebraska

Amazing Attachment MAKES OLD REFRIGERATORS INTO MODERN *Automatic Defrosters!*

Thirty Million Prospects. Sell without "selling pressure" on sensational Free Trial Plan. Just plug it in and leave it. Frees women from drudgery and mess of defrosting. Saves electricity. Keeps food longer, better. Gives longer life to refrigerator. Secret "follow-up" Plan often brings five additional sales by making every user your agent. Big season now on!

SENT FREE ... *JUST SEND NAME!*

Don't send a cent—just your name on penny postcard. We'll send you the biggest money-maker you ever got your hands on and guarantee your sales at profits as high as $5.00 on each sale. Rush your name!

Women buying by the thousands!
Salesmen Cleaning up on "Free Trial" Sales Plan
Sent Free with Instructions.
Make as high as $5 on Every Sale!

MAXILUME COMPANY, 125 West Hubbard Street, Dept. D-10-D, Chicago 10, Illinois

1 "United Nations Flag"—Blue flag, red border. Designed by Danish artist.

2 "Peoples of the World" — Border spells United Nations in 5 languages.

3 "Headquarters" —Shows United Nations "world capitol" in N. Y.

4 "Peace, Justice, Security" —Striking design in rich purple.

FREE!

PRIZED SET OF 4 OFFICIAL United Nations Stamps

"First Issue" Stamps Sent FREE To Get Names for Mailing List

MAIL coupon at once. Get this set of 4 newly-issued United Nations Stamps. NO COST TO YOU! Most talked about stamps of the year! Can be used in ONLY ONE post-office in entire world—official U.N. station in New York. Supply limited. We'll also include other interesting offers for your inspection. PLUS FREE book, "How to Collect Stamps." This offer may have to be withdrawn soon. So rush coupon NOW to: **Littleton Stamp Co., Dept. MX-4, Littleton, N. H.**

Littleton Stamp Co., Dept. MX-4, Littleton, N. H.

Send—FREE—set of 4 United Nations Stamps and informative booklet, "How to Collect Stamps."

Name .....

Address .....

City ..... State .....

$2.98 SPATZ PISTOL INVENTION!

Pat Pend

Total Price

Complete with 50 bullets

GUARANTEED

Walnut Grip

Nickel Finish

All Metal

Simplified percussion action permits low cost shooting. Not an air or pellet gun — but a small bore pistol! Light 14 mg powder charge drives .12 caliber lead bullets at high velocity. Gun has only 4 moving parts. 5 inch barrel. Heavy duty. Free pamphlet on expert pistol shooting, indoor-outdoor target ranges. Ammunition at stores. Limited quantity Spatz pistols. Sold direct. Adults only. State age. Send $2.98 to **LUNDE ARMS CORP.**, Box W 354, San Gabriel, Calif.

New *New*

Introductory Offer $1.69

SEND NO MONEY

New WINDSHIELD WASHER

- LOWER IN COST
- EASIER TO INSTALL
- SIMPLER TO OPERATE

Guaranteed trouble free operation . . . outperforms $8.95 custom models. Can't clog . . . easy to refill. Visible fluid supply. One filling cleans windshield 35 times. **TRY 10 DAYS ON YOUR CAR AT OUR RISK.** Money back if not delighted. Pay postman plus postage or enclose payment, we pay postage. Act now . . . this low price can't last.

YOUNG PRODUCTS
Dept. 277
2605 ELMHURST AVENUE
DETROIT 6, MICHIGAN

World's Only SELF-EJECTING Blank Pistol

NEW "PERFECTA"

NO POLICE PERMIT REQ. | EJECTS EMPTIES AUTOMATICALLY

BLANK PISTOL

FOR SPORTS . FUN . COLLECTORS
SELF PROTECTION . THEATRICALS

Looks, feels, sounds like "the real thing"! But it's SAFE . . . can't hold regular cartridges. Precision constructed of STEEL. Many exciting new features. Handsomest — handiest — most realistic blank pistol ever built! Thrilling possession! — Sure-fire gift!

FEATHER-TOUCH TRIGGER PULL

HANDLE-LOADED

$10.95

Blank Cartridges, 100 for $1.50

ORDER BY MAIL! Enclose Check or M.O. No C.O.D's.

GODFREY IMPORT CORP., Dept. O-7, 67 Reade St., N. Y. 7

ENGINEERING DEGREE IN 27 MONTHS

INDIANA TECHNICAL COLLEGE

Aeronautical, Chemical, Civil, Electrical, Mechanical, and Radio Engineering (inc. TV and Electronics). Drafting, 1-yr. Gov't approved for G.I.'s. Low rate. Earn board. Large industrial center. Students from 48 states, 21 countries. Demand for graduates. Enter June, Sept., Dec., March. Catalog.

104 E. Washington Blvd., Ft. Wayne 2, Ind.

SENTINEL GALVANIC ANODE *KEEPS RADIATORS CLEAN*

$4.50 Per US Carton

Stops Engine Rust, Reduces Cooling System Repairs, Lengthens Engine Life!

Engine block corrosion from electrolytic action causes clogged radiators! Sentinel Anodes stop corrosion, keep cooling system clean. Block stays clean, cooler, so improves cylinder lubrication, retards ring wear and sludge formation, lowers oil consumption. Keeps anti-freeze clear. Anyone can install. Guaranteed. Rush check, M.O. or C.O.D. or write.

SENTINEL MFG. CO. P.O. Box 6097B Seattle 88, Wash.

Secrets of VENTRILOQUISM *Now Revealed!*

Easy to learn in 60 to 90 days with our Home Study Course. **RESULTS GUARANTEED.** Make Money! Be Popular! Have Fun! Big Opportunity! Radio, Television, Stage Appearances! For Free Information regarding price and terms, WRITE. You must state your age. Dummy Catalog 25c.

FRED MAHER SCHOOL OF VENTRILOQUISM
Box 36, Studio MI-4 Kensington Station
Detroit 24, Michigan

Your YOUNGSTER *WILL* LOVE *IT!*

Give your youngster a TRACTALL for the joy-ride of a lifetime! Looks just like a man-size Tractor. The perfect gift for boys, girls, up to 12 years old. **Chain Drive.** Sold *only* direct from factory. **Write for Literature. FREE trial offer.**

INLAND MFG. CORP., Dept. MU-4 • 164 Ellicott St., Buffalo 3, N. Y.

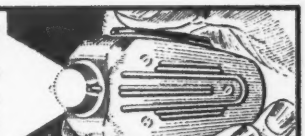
MONEY for MEN ALL DATA FREE

THE PLASTEX Industry needs manufacturers on small scale and for big production of Lamp and Clock Stands, Art Goods and Novelties in Plastex and Marble imitation. Experience unnecessary. 1-qc material makes regular 10c store sellers. Rubber molds furnished for speed production. Small investment brings good returns. We are now placing big chain store orders with manufacturers. Ambitious men have chance for real prosperity. Our free booklet will interest and benefit you.

PLASTEX INDUSTRIES, DEPT. 3
3400 THIRD AVE., NEW YORK 56, N. Y.

AMAZING NEW FLASHLIGHT

Operates without batteries



Here at last a wonderful new imported invention that never leaves you unprepared. Self Generating power that gives a strong white beam. Useful in the Home, AUTO, Boat or anywhere you need an ever-ready flashlight. $4.98 cash, check or money order.

SEND NO MONEY!

Try for 5 DAYS at OUR RISK! Rush your name and address right now. Pay postman $4.98 plus postal charges. If not delighted return for refund within 5 days.

IMPERIAL SALES CO., Dept. 761-F, 480 Lexington Ave., New York 17, N. Y.

ALL PURPOSE ELECTRIC TESTER

You can locate your electrical troubles INSTANTLY with the NEW VEST POCKET ALL PURPOSE ELECTRIC TESTER. IT PROBES. . . . IT TESTS. . . . IT LIGHTS. . . . IT SAVES on all electric repairs. The patented TEST LIGHT traces, then BEAMS on disorders in appliances, circuits, motors, tools, receptacles and EVERYTHING ELECTRICAL, for home, factory, and farm. Tests continuity, shorts and grounds from 110 to 600 Volts. No batteries required. Ready-to-use, 2½ oz. complete, pocket-size, 6 ft. high-test flexible plastic insulated test cord, with patented plastic case and complete instructions. Fully guaranteed.

SAFE! SWIFT! SURE!

Order **TODAY**—only **$2.98** postpaid, or pay postman **$2.98** plus delivery charges.

IMPERIAL SALES CO., 480 Lexington Ave., Dep't. 761-T, New York 17, N. Y.

THE HANDIEST PAIR OF LEGS IN THE WORLD!

SEE STORY AND PHOTOS PAGE 126

MAKE YOUR OWN TABLES, WORK BENCHES, TRAIN PLATFORMS, etc.

Atlas STEEL UTILITY **FOLDING LEGS**

TABLES

TRAIN PLATFORMS

WORK BENCHES

For home, office or factory! It's easy to bolt or screw them to plywood, masonite, wood or other materials. Hold over 600 lbs., fold easily, lock into position for safety. Complete with screws, folding mechanism. Money-back guarantee!

please specify height desired 26, 30 or 34"

$8.95 pr. postpaid (on C.O.D. orders —you pay postage)

(3 pairs, $25)

INSTITUTIONAL SALES CO.
Dept. D, 4932 Portico St., Phila 44, Pa.

LEOPARD COWHIDE

$2.98 FITS ALL CARS

REVERSIBLE AUTO SEAT COVERS

Made of FLEXTON Approved by Good Housekeeping

Order direct from manufacturer and save!

- LEOPARD SKIN on one side COWHIDE on the other.
- Made of Heavy Gauge plastic for long wear • WATER-PROOF and STAINPROOF • Simple to attach — with REINFORCED OVERLAP side grip elastics that hold securely • PERFECT FIT COVERS are made roomy and dress up your car's interior • PATENTED SHIMMING holds seat and back neatly. Sewn with NYLON THREAD for long wear. LONG WEARING-DOUBLE DUTY
- **5 DAY MONEY-BACK GUARANTEE!**
- CHOICE OF SPLIT OR FULL FRONT SEAT STYLES only $2.98. Complete set for front and rear seats only $5.00. When ordering specify make of car and style of seat. Order NOW. Enclose payment and save shipping charges. C.O.D. orders sent collect plus postage.

MARDO SALES CORP., Dept. 924
480 Lexington Avenue New York 17, N. Y.

"I HAVE EARNED AN AVERAGE OF $15.20 AN HOUR"

with Science's New Midget Miracle, the Presto Fire Extinguisher, says W. F. Wydallis, Ohio.

Many others "cleaning up"—so can you! Amazing tiny new extinguisher ends fires fast as 2 seconds. Guaranteed 20 years! Sells for only $3.98! Write for FREE Sales Kit. No obligation. **Merlite Industries, Inc., Dept. 104, 201 East 16th Street, New York 3, N. Y.** (If you want a regular Presto to use as a demonstrator send $2.50. Money back if you wish.)

PAINT SPRAYER

Powerful Professional Type:

Use on any hard to brush surface . . . Chairs, wicker furniture, screens, autos, boats, in fact anything that needs painting. MOTHPROOF clothes, rugs, drapes, storage closets, etc.

No Extras To Buy

- Just plug in and spray . . . glossy paints, enamel, varnish, lacquers, stains, oils, disinfection, insecticides, mothproofers, etc.
- A lifelong useful tool
- Simple, easy to use.

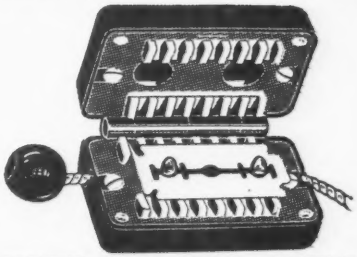
Complete with instruction. Guaranteed for Life.

Send your name and Address. Enclose check or money order. Or sent C.O.D. Plus Postage.

9.95 Complete

IMPERIAL SALES CO.
Dept. 767, 480 Lexington Ave., New York 17, N. Y.

SHAVE THE YEAR ROUND WITH THE SAME BLADE!



BLADEMASTER conditions and hones blades BETTER THAN NEW. Removes knicks and sharpens any double edge blade. Restores an edge that goes through the toughest beard, easily, quickly and with no pull or pain.

BLADE MASTER will give years of service and will save any shaver many times its low price of $2.95. For men who travel. A wonderful device to own and an excellent gift for any man. Rush your name and address right now. Enclose check or money order and we will prepay postage, or Pay postman on delivery plus postal charges.

IMPERIAL SALES CO., Dept. 579
480 Lexington Ave., New York 17, N. Y.

PARAKEETS!
(BUDGIES)

Rare Little Talking Birds

Yes, now you can get a PARAKEET—amazing little birds that sing, whistle, talk, do tricks, perform on your finger! Ideal pet and companion, wonderful gift. They're small (about 7" head to tip of tail), hardy, clean, long-lived. Very beautiful plumage. Easy, inexpensive to raise—less than a penny a day!

GREAT TALKERS!

Even better than parrots—often learn 400 words or more! And these are young birds, just the right age to start learning words and tricks. Teaching is easy, too—parakeets are natural mimics, just love to "show off." Complete, easy, step-by-step training suggestions with each bird.

ORDER BY MAIL TODAY!

Only $14.95 each, complete with training book ("The Talking Budgie") and month's supply of feed. Give color choice: green, blue, yellow, bluish-white. Send check or money order, or order C.O.D. Prompt Express delivery (charges collect). GUARANTEE: Our birds are young, strong, healthy; they must please you completely, or return within 10 days (charges collect) for immediate refund.

HOUSE OF PARAKEETS

3728 Munson Dept. B-1 Topeka, Kansas

LEARN DRAFTING
AT HOME IN SPARE TIME!

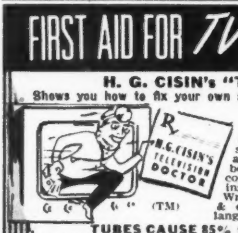
DESIGN YOUR OWN FUTURE!

Enjoy constant employment in an interesting big paying profession. CTS has trained thousands of men at home. CTS gives you 50 illustrated lesson manuals, professional drafting instruments, drafting table, supplies, etc.—everything you need. Send now for FREE book and special PAY LATER form. **CHRISTY TRADES SCHOOL, 4432 N. Kedzie, Dept. DB-1802, Chicago 25.**

FIRST AID FOR TV SET OWNERS!

H. G. CISIN's "TV DOCTOR"

Shows you how to fix your own set rapidly and SAFELY!



YOURS TO TRY 5-DAYS FREE!

Save money, throw away service contracts. Here's a real "fix-it-yourself" book—an amazing, quick, copyrighted method of locating & fixing TV troubles. Written by a noted inventor & educator H. G. Cisin, in language you can understand.

TUBES CAUSE 85% OF TV TROUBLES!

"TV DOCTOR" shows you how to quickly locate and change all defective tubes with complete safety.

WITHOUT EXPERIENCE!—PICTURES & TEXT MAKE FIXING IT YOURSELF EASY

Reveals many closely guarded TRADE SECRETS. Lists over 123 trouble conditions. Method applies to all TV sets, even newest RCA's, Philco's or any 2,000 models, old & new. Copyrighted TROUBLE SHOOTING GUIDE pin-points hundreds of troubles.

11 money-saving, fact crammed, detailed, illustrated chapters include: practical ways to combat interference & ghosts, how to appraise & buy a TV set, valuable information on antennas, lead-ins, color, explains TV, terms, lists names & addresses of TV mfgs.—a veritable encyclopedia.

Continual Entertainment—No Service Charges

Only $1. — you'll say it's worth hundreds

FREE OFFER: Get the new full size profusely illustrated $1 book **"TV TROUBLE PICTURE GUIDE INCLUDING TV DICTIONARY"** as a FREE GIFT, by ordering the TV Doctor ($1) and H. G. Cisin's famous **"TV TROUBLE SHOOTING METHOD"** ($1) which trains you to be a TV diagnostician and TV service man. Think of it—all 3 TV books postpaid for only $2 . . . you save $1.

RUSH COUPON with your name & address. Enclose $1. 5-days to read without risk or return for refund.

ORDER NOW! POSTPAID

H. G. CISIN, Consulting Engineer, (Dept. M-5), 200 Clinton St., Brooklyn 2, N. Y.

☐ Enclosed find $2. full payment for "TV DOCTOR", "TV TROUBLE SHOOTING METHOD" & "TV PICTURE GUIDE"—rush copies postpaid.

☐ Enclosed find $1. in full payment for "TV DOCTOR," rush copy postpaid.

Name _____

Address _____

City _____ Zone ___ State _____

ELECTRIFY YOUR SEWING MACHINE

BE AN AGENT!

$9.50 NEW LOW PRICE!

Re-sell at a PROFIT! You make as high as $9 with each sale. Kit comes fully wired, installed in a jiffy. Fits all machines! You get **ALL NEW PARTS:**

- Motor & Bracket
- AC-DC 115v 60c
- Multi-speed foot control
- Cord set & block
- Easy instructions
- Steel pulley & belt

FREE . . . reg. $2.95 chrome SEWLITE given with every kit.

10 DAY FREE TRIAL—MONEY BACK GUARANTEE!

Send $1 deposit, pay postman balance plus postage. Please state whether wheel on your machine turns toward you or away from you. Shipping wt. 6 lbs. Write for free sewing machine accessory catalogue. No obligation.

SENIOR SEWING MACHINE CO.

179 CLIFTON PLACE Dept. MI-14 Brooklyn 5, N.Y.

Our 482nd Advertisement

REAL DIESEL ENGINE

$2.95 • for planes, boats, midget cars • 7500 RPM; 1/7 HP; ht. 3½"; wt. 5 oz. • precision machined

You just can't beat this price for a precision diesel engine! Streamlined, compact, easy to install. Thousands of satisfied users all over the world. Fast delivery if you ORDER TODAY! Send $2.95 plus 25c postage.

Gotham Hobby Corp. Dept. M, 107 E. 126th St. New York 35, N.Y.

RADIO-TV-ELECT. TESTER

All-around Trouble Shooter

Will test Radio-TV tubes, ignition coils, condensers (all types), spark-plugs, irons, transformers, speakers, etc., for opens, shorts, leaks, into megohms. Sensitivity compares with VTVM. Tests 70-750 volts AC or DC. Tests mica, paper, oil, ceramic, air and electrolytic condensers for shorts, opens, leaks and you can tell approximate capacity, after few tests. For All Engineers, experts and beginners.

NO DANGER, NO SHOCKS, NO PLUG IN and will not harm anything you test.

CHECKS INDUCTANCE TOO.

5 day money back guarantee

ONLY $4.95 PLUS 25c POSTAGE

HOWARD SALES CO., Dept. MI-4, 539 Atlantic Ave., Bklyn. 17, N. Y.

MOTORISTS! SAVE GAS with DIAL-A-MILE

DIAL-A-MILE

25¢

Check gas economy of your car with pocket-size **DIAL-A-MILE** calculator. Simply set gallons of gas purchased against miles traveled and **DIAL-A-MILE** registers miles-per-gallon. Spot engine malfunctions! Compare gas brands! Calculator has handy trip log on back. Send 25c, no stamps, to **DIAL-A-MILE, Dolton, Illinois, today!**

GET UP TO 40% OFF!

BUY IT *WHOLESALE!*

START A BUYING SERVICE

At home, spare time. Get big-name merchandise for clients (and yourself) at up to 40% and more below the regular list price. Make fat commissions. Folks eagerly buy through you to get sizeable discounts. Send postcard for details.

AMERICAN BUYERS' SERVICE, 629-CT Linden Ave., Buffalo 16, N. Y.

FREE SAMPLE LESSON

WATCHMAKING

CHICAGO SCHOOL OF WATCHMAKING
1608 Milwaukee, Dept. 642, Chicago 47, Ill.

Show me without obligation how I can learn watch repairing at home. Rush free sample.

Name .....

Address .....

City ..... Z..... State.....

Your advertisement can reach this mail-buying audience of multi-million readers for only 80c per word . . . payable in advance . . . minimum 10 words. Copy to be inserted in June issue must be in the office April 3. Mail to MECHANIX ILLUSTRATED, 67 West 44th Street, New York 36, N. Y. Word count: Zone number free. Figure one word: Name of state (New Jersey); name of city (New York); sets of characters as in key (14-D); also abbreviations as 35MM, 8x10, D.C. A.C.

CLASSIFIED SECTION

SAVE MONEY • ORDER BY MAIL

ADVERTISING SERVICE & AGENCIES

$10,800 PROFITS! YOUR Own Mailorder Business! No capital risk! "Success Plan" (worth $2) free! Write today! Treasury, 149 Storer, New Rochelle 5-X, N. Y.

ADVERTISE: 24 WORDS, 40 Newspapers $3.50. Lists Free. Advertising Bureau, 10511-B Springfield, Chicago 43.

"INTERIOR DECORATING"; fully illustrated, 128 pages, Handling, 25c; Advco, 98 Front, Mineola, N. Y.

AGENTS WANTED

BARGAINS—TERRIFIC Savings—Job Lots —Close-outs! Also save up to 50% on complete lines of Drygoods, Clothing, Hosiery, Notions, Drug Sundries, Toiletries, Novelties, Gifts, Jewelry, Television, etc. 2000 items. Send 25c for Illustrated Wholesale Bargain Catalog, Close-out Flyers, and Special "Get Acquainted" offer. Valuable merchandise certificate (worth many times 25c) included Free. Reliable Jobbers, 311-C North Desplaines, Chicago 6.

MAKE MONEY Fast—Sell big value Greeting Cards. Four new 21 card $1.00 All-Occasion Assortments, Birthday, Easter, Novelty cards. Gift Wrappings, Stationery, Notes. Unusual Gift Items. Over 100 fast-sellers. Amazing profits. Write for Samples on Approval and "Get-Started" plan. Hedenkamp, 361 Broadway, Dept. MI-16, N. Y.

AT LAST! Something New and Sensational in Everyday Cards, 21 for $1. Make Extra Money Fast! Show Satin, Velour, Metallic Cards. Get orders easy. Big line $1 Assortments, Scented Stationery, Personal Matches, Kiddie Books. Imprints Free. Two $1 boxes On Approval. Puro Co., 2801 Locust, Dept. 264-D, St. Louis 3, Mo.

SCHOOL SENIORS — Earn sensational profits selling classmates America's most beautiful Graduation Name Cards. Largest Selection. Outsells all others.* Free Sample Kit. Printcraft, Dept. I, 1425 E. Elm St., Scranton 5, Penna.

PHOTO-SALESMEN-AGENTS. Sell beautiful hand colored plastic enlargements and sensational new photo compacts, rings, bracelets, lockets, etc. Collect deposit, we deliver. Profitable sideline. Send card, for Free sample kit. Novel Portrait Co., 3343-B North Ave., Chicago, Ill.

EXCELLENT SIDELINE for printing and advertising salesmen. Decalcomania name plates in small quantities. Great demand. Also, make money with our line of Automobile Initials and Sign Letters. Free Samples. "Ralco." XL-Roxbury, Boston 19, Mass.

BE A Money Maker . . . Use your home as magazine headquarters. Liberal commissions. No experience—No capital needed. Everything furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520A, Mount Morris, Ill.

BIG PROFITS Selling Ties. ($2.00 values). $6.50 dozen. Free catalog. Empire Cravats, 648B Broadway, New York 12.

MAKE WEDDING Profits. Sell invitations, napkins, matches. Samples free. Dunbar's, Middlebush 4, N. J.

SELL NEW-USED clothing from home, auto, store. Men's suits $1.25. Topcoats 70c, Pants 30c. Dresses 20c. Ladies' coats 38c. Other Bargains. Catalog Free. S&N, 605-X 12th Place, Chicago 7.

NEED EXTRA Cash? Take orders for personal initialed belts and buckles, cap badges, tie holders, etc. Choice of 3000 emblems. Free sales kit. Hook-Fast, Box 1425MI, Providence, R. I.

BUY WHOLESALE thousands nationally advertised products at big discount. Sent free "The Wholesale Plan." American Buyers' Service, 631-G Linden, Buffalo, N. Y.

WHERE TO Buy 800,000 articles direct from Manufacturers. Save by buying direct. Sent Free. "Your Profits Under the Spotlight." Glass Pub. Co., Ellwood City 7, Penna.

BIG DAILY Profits—Selling Uniforms, Shirts, Caps, Ties, Wallets, Initialed Buckles, Belts, Badges, Choice 3000 Emblems. Free Sales Kit. Hook-Fast, Box 480MI, Roanoke, Va.

FREE SAMPLES, and amazing plan, giving you gorgeous Dress without penny cost. Rush name today with dress size. Harford, Dept. G-535, Cincinnati 25, Ohio.

SELL BIG money-maker to men and women. Easy handwork makes fast-selling useful articles. Sample free. Sunmade Company, Brockton 64, Mass.

ULTRA-BLUE STOCK Signs—7c, sell 50c. 2000 slogans, 7" x 11", comedy, religious, general. 15 samples, $1.00. Lowy, 812 Broadway, Dept. 663, New York 3.

GOLD LACQUERED and Silver Sign Letters. Windows. Doors. Trucks. Standard sizes. Penny each. Free samples. Atlas-M, 544 West 79th, Chicago 20, Ill.

NYLON AND Orlon Uniforms, Immediate delivery, immediate profits. Free sales kit. Superior Fabrics, Dept. 1-4, 3936 Market, Philadelphia 4, Penna.

SALESMEN, DISTRIBUTORS—Fast Selling Costume Jewelry direct from factory; big picture catalog free. Pickcraft, L-19 Bank, Attleboro, Mass.

NEW PLASTIC Mending Tape. Just press on! Repairs clothing instantly. Lightning seller. Samples sent on trial. Kristee, 146, Akron, Ohio.

BARGAINS! COMBS, Novelties, Notions, Sundries. Variety Merchandise. Carleton House, Texas City, Texas.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect "Odd"!! Pacific-21C, Oceanside, Calif.

MAKE MONEY Selling Ties. Free catalog. Write to Philip's Neckwear, Dept. 919, 20 West 22 St., N. Y.

ADDRESS ENVELOPES! Immediate Commissions! Starting Outfit, 25c! Hirsch, Spring Valley 1, N. Y.

BUY WHOLESALE. 25,000 items. Catalogue 25c. Matthews, 1472-D8 Broadway, N. Y. C.

SALESMEN WANTED

NEW FOOTWEAR Sensation! Hundreds extra dollars for you! Sell Flexiclogs, new, patented hinged wooden sandals that actually "Flex" with your foot. Interchangeable straps, Neoprene crepe soles. Friends, neighbors buy on sight. Send for Free Sample Outfit now! Flexiclogs, Box MI-4, New Holstein, Wisc.

AD MATCHES! Sell Amazing Designs—20, 30, 40 and 240-light book matches. Bigger spot cash commissions; every business a prospect. Low prices for high quality. Repeats. Start without experience; men, women; full, part time. Buy Nothing! Sales kit furnished. Match Corp., Dept. MI-12, Chicago 32, Ill.

WANT TO Make Real Money? You can positively make $50.00 a day and up selling a brand new item going to every type of Food and Beverage Store, Factories, Laboratories, Hospitals, etc. First time advertised. Samples furnished. Utility Durawear, 53 West Jackson Blvd., Dept. MI-4, Chicago 4, Ill.

ADVERTISING BOOK matches—Cash in on big demand—sell Union Label matches. Cuts for all business and political parties—Free powerhouse selling kit —low prices—protection guaranteed on repeat orders—Cash commissions. Superior Match Co., Dept. F-452, 7528 Greenwood, Chicago.

NEW JOBS open in selling! Send name, address for five free issues of Opportunity Magazine's money-making guide, listing hundreds of companies who'll pay you well, full or part-time. No experience needed. Opportunity, 28 E. Jackson, Dept. 19, Chicago 4, Ill.

BIG MONEY Fast. Sell printing, office supplies, advertising specialties. Experience unnecessary. Every business buys. Lowest prices. Full-part time. 1000 products. Permanent. Samples Free. Kaeser-Blair, Dept. 44, Cincinnati, Ohio.

SUCCESS OPPORTUNITY—Sell famous Spring-Step Shoes. Earn up to $25 daily plus cash and shoe bonus. Write MI-3, Ortho-Vent Shoe Co., Salem, Va.

MAKE BIG money—season starting—sell 1953 calendars, advertising specialties and executive gift line. Experience unnecessary. Commissions advanced. Outfit Free. North American Calendar, 605-AD Washington, Chicago 6.

AMAZING DISCOVERY, Master Glaze, puts brilliant glass-like surface on cars. Free Sample, information. Big commissions. Master Glaze, Dept. 740, 7720 Harwood, Milwaukee, Wisc.

MAKE MONEY with fast-selling Bostonian Shirts. Blouses too. Spare time, full time. Sales Kit Free. Bostonian, 89 Bickford, Dept. M-12, Boston 30, Mass.

AUTHORS' SERVICE

I WANT New Writers to cash checks of $1 to $100 offered daily. The easiest way to write for pay. No previous experience necessary. Free Details. Saunders M. Cummings. 468-14 Independence Bldg., Colorado Springs, Colo.

AVIATION

BULLET RACEPLANE. Homebuilt monoplane. Blueprints $2.00. Corbcraft, 81-M Elmerston, Rochester 20, N. Y.

BARGAINS

DRESSES 24c; SHOES 39c; men's suits $4.95; trousers $1.20. Better used clothing. Free cat. Transworld, 164-A8 Christopher, Bklyn. 12, N. Y.

RUBBER BANDS—Every Home And Business Needs Them. 200—25c, 500—50c. Assorted Sizes. Sanford, Box 192, Sharon, Penna.

BUSINESS OPPORTUNITIES

COIN MACHINES earn big money! Machines at $10.50 earn as high as $5.00 weekly profit. Place machines in stores, hotels, filling stations, etc., and your income starts immediately. Routes can be operated in spare or full time with no experience needed. We'll tell you how and send you a catalog describing our nut, candy, gum and postage vendors; also pinball machines, music boxes, etc. Write immediately to Parkway Machine Corporation, Dept. 15, 715 Ensor, St., Baltimore 2, Md.

TRADE MAGAZINES Help You To Success. Get latest copies through our Easy-to-Get-Acquainted Service. Hundreds of business, professional, craft, cooperatives, dairying, dental, diesels, dogs, dramatic, drugs, educational, electrical engineering, eugenics, explosives, farm bureau, farm implements, farm livestock, farm newspapers—others covering All interests. Send for List today. It's Free. Commercial Engraving Publishing Company, 34W North Ritter, Indianapolis 19, Ind.

BIG MONEY. Spare or full time in your home. No selling! Spray New Miracle Finishes, Plush and Suede, on signs, radios, automobiles, figurines, lamps, toys, etc. Our business is booming. Help us fill huge demand. New easy Flok-Kraft methods. Material costs few pennies. You get dollars. Free samples. Complete powerful money-making plan free. Write now! Coast, 1002E S. Los Angeles St., Los Angeles 15.

WANTED AT Once! Home Producers! By Manufacturers in our Clearing House Service. Become a sub-contractor, casting plaster and plastic products for these companies. Thousands of easy to make items required. Cash in at home, without previous experience. For detail; write Plastic Service Guild, Dept. MI4, East Boston 28, Mass.

BE INDEPENDENT, be secure, have your own profitable business—earn $20 and more a day making beautiful, fast-selling lamps at home. No equipment needed. Illustrated course teaches you quickly. Course, parts catalog, wholesale price list—only $2. Gearon Co., Dept. 200-C4, 27 S. Desplaines, Chicago 6, Ill.

IMPORT-EXPORT! MEN-WOMEN. Instructions From Established World Trader. Shipped For No Risk Examination. Opportunity Profitable World-Wide Mail Order Business From Home Without Capital; Or Travel Abroad. Experience Unnecessary. Free Details. Mellinger 1715-Y Los Angeles 24.

$10. HOUR! POSSIBLE! At home! Invisible reweave cuts, tears, moth holes, snags, burns in clothing, 28 samples, automatic latch steel tool, including material for life and instructions $3.00 completely guaranteed. Literature free. Walsh, 894 Main, Buffalo 2, N. Y.

BRONZED BABY Shoe mountings, supplies, and equipment. Plating assemblies, all types and sizes. Save 50% and more on slightly used units. Instructions. Free Catalogs. Hollywood Bronze Supply, Dept. F, 1624 E. First Street, Los Angeles 33, Calif.

COLORGLAZED CONCRETE pottery made without molds. Patented method. Cemetery products, novelties, tiles. Basement leaksealing. Money-making projects. Booklet, details free. Men only. National Pottery, Grand Rapids, Minnesota.

INVISIBLE REWEAVING—big profit, big demand, easy to learn with low-cost complete course—nothing else to buy, ever. Details free, write today: Fabricon R-3, 8342 S. Prairie Av., Chicago 19, Ill.

MAKE TOUGH, durable plastic—1c pound. Makes attractive floors, walls, built-ins, roofs. Build good home, $150.00 room. Bays Laboratory, Oklahoma City 9.

OVER 700% PROFIT making finished photos in 2 minutes on the spot in daylight without darkroom. No experience needed. Simple directions teach you quickly. Write, P D Q Camera Co., 1161 N. Cleveland Ave., Dept. XM, Chicago 10, Ill.

INVISIBLE REWEAVING. Men-Women. Instructions shipped for no-risk examination. $5.00 hour possible spare-full time. Reweave burns, tears, moth-holes like new at home. Free details. Skilweave, 1717-DG Westwood, Los Angeles 24.

MAKE MONEY At Home as renewal headquarters for all magazines. Liberal commissions. No experience—No capital needed. Supplies furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520B, Mount Morris, Ill.

FABULOUS EARNINGS—Fascinating pastime. Growing Genuine, living miniature (Ming) Trees. New sensational Business or Hobby. Astounding information Free. Dwarf Gardens, Box 355E, Briggs Station, Los Angeles 48, Calif.

PROFITABLE HOME Business. Electroplate novelties, baby-shoes, auto parts, mirrors, etc. Portable Tyco Electro-Plater $5.95, including plating salts, formulas, instruction manual. Tyco Metals, Box 13231-DE, Houston 19, Texas.

GOOD PAYING Business silvering mirrors, plating autoparts, reflectors, bicycles, bathroom fixtures, etc., by late method. No tanks or shop required. Outfit furnished. Free Booklet, Gunmetal Co., Ave. A, Decatur, Ill.

LEARN PIANO Tuning, Repairing—at home in 30 days. Unlimited Income. Phonograph recordings, tools and instructions furnished. Write Capitol City Tuning School, Dept. 245, 129 E. Michigan, Lansing 16, Mich.

COLOR CONCRETE with chemicals. Marble-glaze cement benches, pottery, garden ornaments. Home—Shop. 10c brings sample, pictures. Hollywood Cementcraft, 8527-L Wonderland, Hollywood 46, Calif.

LEARN SEWING Machine Repair. Electrify, rent, trade, sell. Make "Big Money" at home, spare time. New motors, machines, etc., wholesale. Details free. Taylor Service Co., Hamilton MI-4, Ohio.

LEARN SILK Screen Printing; Invisible Reweaving; Repair Dolls; Make Rubber Stamps. Natural Rubber for Molds. Sample and Catalogue of "40 Ideas" Free. Universal, Box 1076-M, Peoria, Ill.

TO $35.00 WEEKLY. Spare Time, Home Operated, Mail Order Business. Successful Small "Beginner's" Plan. Everything Supplied. Lynn, 10420-X National, Los Angeles 34, Calif.

BIG MONEY and fun growing Live Miniature Ming Trees on your window sill. Write for Free rare tree seed and plan. National Nurseries, 8620-D Ruthelen, Los Angeles 47, Calif.

PLASTIC RUBBER from recapper's waste ground rubber. Useful! Profitable! Complete instructions, samples $1.00. Moneyback guarantee. Ceeten Products, 242E Crozet, Va.

RAISE PHEASANTS on the $100 week plan. Little capital and space can make you independent. Free details. Great Central Game Management System, Columbus 16, Kan.

BOOKKEEPERS—EARN up to $520 month serving small firms part or full time. Proved plan; simplified system. Particulars free. Tax Saver System, Dept. 3, Fort Worth 2, Texas.

$25 WEEKLY WORKING two hours daily. No canvassing. No manufacturing. Lycke, Box 2471-C, Cleveland 12, Ohio.

MAKE FLEXIBLE Molds! Cast plaques, bookends, figurines! Free sample! H. Tooker, 630-E Chestnut, Hamilton, Ohio.

START A Venetian Blind Laundry. Profit opportunity for lifetime business. New machine method. Free booklet on request. F. E. Co., 442 N. Seneca, Wichita 12, Kan.

MONEY IN New Greaseless Doughnuts. Start in kitchen. No smoke. Sell stores. Free recipes. Irving Ray Co., 3605 South 15th Ave., Minneapolis 7, Minn.

START MAIL Order Bookshop—Profits to 70%. Profitable future. 25c brings booklet, samples, exciting ideas. General Publications, Ossining 4, N. Y.

THERE'S BIG money servicing a route of waterless hand cleaner dispensers, full or spare time! No other like ours! Western H. Aircraft, Los Angeles 19.

EARN EXTRA money weekly mailing circulars for advertisers. Complete instructions 25c. Siwasfian, 4317-A Gleane Street, Elmhurst 73, N. Y.

MAILING POSTCARDS selling repeat merchandise is profitable. Everything supplied. Details free. Gordin Publishers, Box 23, Pawtucket, R. I.

$4 TO $10 HOUR Spare time in billion-dollar Adjustment field. Free Book—Now! Universal Schools, D-102, Box 8202, Dallas 5, Texas.

EARTHWORM BREEDING? First, get unusual story, "An Earthworm Turned His Life." Free. Earthmaster, Dept. 4, El Monte, Calif.

START OWN Business—home, office; booklet describing "137 Business Plans" free. Elite Co., 220-G Grand Street, New York 13, N. Y.

SELL YOUR products by Radio! Pay commission; no risk! 400 nationwide broadcasters! Simon M5, 48 Fifth Avenue, Pelham 65, N. Y.

BUY IT Wholesale! Manufacturers, distributors offer 850,000 items. Literature free. Olsen, 1231-C East Third St., Duluth 5, Minn.

BOOKKEEPERS EARN $100.00 weekly operating Bookkeeping-Tax Service. Details Free. Universal, Box 664-D, Springfield, Mo.

EXTRA MONEY—No Selling—operate vendors. Amazing profits, details Free. Silver King, Suite 222, 622 Diversey, Chicago 14.

"MAKE PERFUME" Profitable mailorder Business—Catalogue Free. "International," 6347 Parnell-MI-4, Chicago 21, Ill.

START A Collection Agency business. Very profitable. Quickly learned. Write Cole & Associates, Syracuse 2-MI, N. Y.

ADDRESS ENVELOPES, Postals, at home —longhand, typewriter. Information, 3c stamp. Carl F. Torrey, Melrose 76, Mass.

MAKE MONEY Addressing Envelopes! Instructive details reveal how. Malco Publishers, 4-MI, Columbus 5, Ohio.

MAKE MONEY addressing envelopes. Our instructions reveal how. Paul Glenway, 5713 Euclid, Cleveland 3, Ohio.

SAWDUST. TURN it into cash. Twenty methods. Instructions 50c. Charles Company, 12-CDT, Norwood, Ohio.

CORNCOBS. TURN them into cash. 16 methods. Details 50c. Residual Survey Co., Box 1045, Decatur, Ill.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect something Odd! Pacific-23C, Oceanside, Calif.

SELL! BUY! Trade! anything. Read, "Trading Post Magazine" 20c. Thorne's, 525 Dewey, Jackson 18, Mich.

TIN-CANS. TURN them into cash. Nine methods. Instructions 50c. Charles Company, 12-CDV, Norwood, Ohio.

SELL BY mail; free details. Instructive booklet 25c. Manhattan House, Box 51-X, St. Albans 12, N. Y.

QUICK MONEY! Repairing Car Batteries! At home! Easy too! Batteryman, Grand Junction, Colo.

CLASSIFIED SECTION

LIQUID RUBBER, make flexible molds. Free sample. Chaney, 1130 E. 16th St., Jacksonville 6, Fla.

$46 FROM SQUARE Foot Plywood. Jigsaw necessary. Write, Woodarts, Bridgewater, Mass.

MAKE BIG Money at home with Magic Pearl Finish. Free Plan. Pearl-Art, 7216 Bear, Bell, Calif.

PROFITABLE HOME Businesses. Dollar Maker "Tips." Free details. Earl Riley, Red Bluff, Calif.

FORMULAS—ALL Kinds—Real Moneymakers. Catalog Free. Kemico, Park Ridge 60, Ill.

RECAST OLD batteries into new. Latest Achievements. Battery Laboratories, Minneapolis.

50,000 ARTICLES WHOLESALE. Source directory, dime. Nelko, Box 3462-DR2, Chicago 54.

HOW AND where to obtain Capital? Free details, Star Service, Wapakoneta, Ohio.

MAKE PAINT for 25c a quart. Instructions $2.00. Fabian Johnson, New Milford, Conn.

INCOME FROM local information. No selling. Write Neherco, La Verne 2, Calif.

CASH INCOME From Your Backyard! Unusual businesses! Picket, Florence, Ky.

START BUSINESS Without Capital! Reliance, 15-F Park Row, New York 38, N. Y.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 28.

100% PROFIT—SELL Names. Write Siegel, Box 183-MI, New York 2.

CANDYMAKING

MEN—WOMEN—"Everybody Likes Candy." Learn to make professionally. (Our 40th year.) Ragsdale Candies, D3 East Orange, N. J.

CARTOONING, SIGNPAINTING, DRAWING AIDS

"HOW TO Make Money With Simple Cartoons"—a book everyone who likes to draw should have. It is free; no obligation. Simply address Cartoonists Exchange, Dept. 354-C, Pleasant Hill, Ohio.

EARN MONEY evenings, copying and duplicating comic cartoons for advertisers. Adservice, Argyle 38, Wisc.

SIGN PAINTING taught at home. Test lesson free. Ben Kerns, Box 812-M, Greenville, S. C.

CHEMICALS & SUPPLIES

SAVE MONEY! Supplies Catalog 15c, refundable. Laboratory Sales, Box 161-C, Brighton, Mass.

EDUCATION & INSTRUCTION

PIANO TUNING pays. Learn this profitable profession at home. Our Tonometer and mechanical aids make learning easy. No knowledge music necessary. Diploma granted. Largest and oldest school—53rd year. G.I. approved. Write for booklet. Niles Bryant School, 87 Bryant Bldg., Washington 16, D. C.

WANT A Diesel Job? New Opportunities to increase income. Higher Pay. More money. We can help you Qualify. Tools. Shop method home training. Write today! Diesel, Tractor, Heavy Equipment Division, Interstate Training Service, Dept. 4D, Portland 13, Ore.

TIRED OF No Money, second rate jobs? Like to start a real career with a lifetime of high salaries? Write me about two growing fields that really need men. Ed. Howes, Chief, National Schools, 4000 S. Figueroa Street, Los Angeles 37.

BOOKKEEPERS! INCREASE your earnings! Operate your own simplified "Dollar-A-Week" Bookkeeping and Tax Service. Full or spare time. Details Free. No obligation. Ellis, Box 202-D, Cedar Grove, N. C.

PRACTICAL NURSING—Learn Easily at Home, Spare Time. Big demand, good earnings. High School not necessary. Write for free facts. Wayne School, Dept. FF7, 2527 Sheffield, Chicago 14, Ill.

MEDICAL LABORATORY Technicians in great demand. We train you in your own home. Catalogue free. Imperial Technical Institute, Box 973-A, Austin 65, Texas.

USED CORRESPONDENCE Courses and Books sold and rented. Money back guarantee. Catalog Free. (Courses bought.) Lee Mountain, Pisgah, Ala.

HIGH SCHOOL—No Classes. Study at home, spare time. Diploma awarded. Write for Free Catalog HAJ-15. Wayne School, 2527 Sheffield, Chicago 14, Ill.

SUCCESS ANONYMOUS. Start Local Club. Social. Educational. Fraternal. Write: Ben Martin, Williamsburg, Mich.

USED CORRESPONDENCE courses bought and sold. Literature free. Walsh, 894 Main, Buffalo 2, N. Y.

HOME STUDY course, drugless therapy. Free Literature. Inst. of Drugless Therapy, Tama, Iowa.

FORMULAS & PLANS

CONCENTRATED VEGETABLES. Highest grade, raw, dehydrated, in tablet and powder form. No drugs. Write today for free circular. Kiro Concentrated Foods, Tama, Iowa.

REAL MANUFACTURING formulas. Lists free. W. Cummings, Chemist, 228 Gordon Ave., Syracuse, N. Y.

FORMULAS, LATEST. Catalog—Chemical Instruction Sheet 10c. Belfort, 216 West Jackson, Chicago 6.

LABORATORY TESTED Formulas. Lists Free. Pont Chemical Company, Terre Haute 3, Ind.

MALE HELP

AMBITIOUS MARRIED Man Travel U. S. With Wife, training for fascinating career in radio advertising. . . . Executive position, non-travel available after 18 months. Salary plus commission start. Highly profitable. No Experience Necessary. We Will Train friendly outstanding, young career man with good car. Wife must type, drive and assist first 18 months. Lifetime opportunity with successful firm. Write immediately. National Radio, West Hempstead, N. Y.

FOREIGN & LATIN American Employment. 1952 "Foreign Service Directory" gives Up-To-Minute Facts on Military & Civilian Construction, Government Jobs, Major Oil Listings, Aviation, Transportation, Steamship Lines, Mining, Importers, Exporters, How-When-Where to apply, application forms, Hot List Firms Hiring. $1.00 postpaid. Global Reports, P. O. Box 883-MI, Hollywood 28, Calif.

FOREIGN EMPLOYMENT Construction men, building trades, helpers, office men, others, interested in Foreign Projects. High wages, quarters, transportation. Send $1 for Foreign Construction Compendium and Application Forms. Foreign Service Bureau, Dept. MI-4, Metuchen, N. J. (Not an employment Agency—no fees.)

FOREIGN JOBS. Contracts underway and soon starting in Africa, South America, Canada, England, Europe, South Pacific, Middle East, Mexico and Alaska. Send $1.00 for foreign job news, information, application forms, etc. DCS Foreign Job News, Dept. 268-AL, Bridgeport, Ill.

ALASKA—LAST American Frontier. $1.00 brings 1952 Business Directory, Government Map, Construction Projects Military & Civilian, Homestead & Highway facts, Hunting-Fishing-Game Rules, Mining, Aviation. List of firms hiring. How-When-Where to apply. Alaska Opportunist, P. O. Box 883-MI, Hollywood 28, Calif.

CONSTRUCTION WORKERS. Want to make better jobs? Longer jobs? Latest information. Jobs breaking. Jobs underway. North, South, East, West. The best. Big job list. Accurate. Up to date. Send one dollar. Dempster's Construction Scout News, Dept. 268-AK, Bridgeport, Ill.

TIRED OF No Money, second rate jobs? Like to start a real career with a lifetime of high salaries? Write me about two growing fields that really need men. Ed. Howes, Chief, 456 W. Santa Barbara Avenue, Los Angeles 37.

HONOLULU HELP wanted columns airmailed $1.00. Jackson's, #3 Campbell Block, Honolulu, Hawaii.

MONEYMAKING OPPORTUNITIES

START YOUR Own Business on credit. Always your own boss. 1437 Dealers sold $5,000 to $28,500 in 1950; their average $6704. We supply stocks, equipment on credit. 200 home necessities. Selling experience unnecessary to start. Wonderful opportunity to own pleasant, profitable business backed by world-wide industry. Write Rawleigh's, Dept. D-U-MOM, Freeport, Ill.

SCHOOL SENIORS — Sell Classmates America's most beautiful Graduation Name Cards. Largest Selection. Highest commission. Outsells all others. Free Sample Kit. Printcraft, Dept. 1, 1425 E. Elm St., Scranton 5, Penna.

VENDING MACHINES—No selling required. Send for Free 32-page illustrated catalog describing our numerous coin machines; also showing you how you can earn Amazing Profits either full or spare time. Parkway Machine Corporation, Dept. # 5, 715 Ensor St., Baltimore 4, Md.

WORK FOR U. S. Gov't.! Start high as $73.00 week. Men-Women. 95,000 jobs open each month. Experience usually unnecessary. Qualify Now! Write for Free 32-page book showing jobs, salaries, sample tests. Franklin Institute, Dept. G-28, Rochester, N. Y.

BIG MONEY Making Opportunity. Exclusive line work uniforms. Jackets, pants, shirts, coveralls. Advertising embroidered. Every business prospect. Outfit Free. Master Corp., 219 Water, Ligonier, Ind.

MAKE MONEY At Home mailing powerful literature featuring books and merchandise. Big profits! Everything supplied! Jillco, Box 91, Garfield 1, N. J.

MAKE MONEY addressing Envelopes at Home! Our information reveals how. Only 30c. Business Bureau, Dept. 63-D, P. O. Box 2224, St. Louis, Mo.

FORTUNES WON by Contest Fans! How and Where to Win Your Share! 3c stamp. National Contest Bulletin, Box 2685-R, Miami 16, Fla.

DETECTIVES EARN Big Money. Experience unnecessary. Detective Particulars free. Write, George Wagoner, 125-J West 86th, New York 24.

TEN PROFITABLE industrial formulas of common household products, $1. Ethylene Laboratories, 2224 Liberty Street, Allentown, Penna.

$35.00 WEEKLY! POSSIBLE! Home! Spare time! 27 unusual projects! Literature free. Walsh, 894 Main, Buffalo 2, N. Y.

FREE ADS Brought Abbeon $8,000. Sensational Mailorder Plan Free. Publicity, 1501-Z Trailsend, Kalamazoo 26, Mich.

LEARN PIANO Tuning quickly, easily at home. Big profits. Tools, parts furnished. Empire School, 606-E University, Champaign, Ill.

CONTEST FANS! Improve your tie-breaker results. Details $2.00. Puzco Service, Box 516, North Sacramento, Calif.

FREE BOOK "505 Odd, Successful Businesses." Work home! Expect something Odd! Pacific-22C, Oceanside, Calif.

HIGH SCHOOL Men—Splendid opportunity to earn money this vacation. Write, Box 154, Oakland City, Ind.

UNPAINTED PLAQUES, Bookends, Novelties. Stamp brings list. Umlauf, 239 So. Luther, Detroit 25, Mich.

BE APPOINTED State Notary Public Now! Details: Stationers, Helotes 50, Texas.

TIE-BREAKER PICTURE puzzles exposed, $1.00. Wingrad, Box 1495, Phila. 5, Penna.

WANTED: WOMEN to fashion ties. No selling. Write Behnke, Cuttenberg 80, Iowa.

$1000 WON BY Client. Contest Service. Contests, 13 Earl, Red Bank, N. J.

PROFITABLE OCCUPATIONS

TURN YOUR spare time into cash. Make quick-selling, highly profitable lamps —every home a prospect. No experience or special tools required. New 1952 56-page illustrated catalog shows shades, shade frames, figurines and bases, oil lamp converters, boring compounds, and dozens of similar items. Also all kinds of sockets, cords, pipes, harps, finials, bases, and hundreds of other parts—everything you need. Special 8-page section shows 6 beautiful lamps in kit form ready to assemble. You buy wholesale, sell at retail—make big profits. Hundreds doing it. You can, too. Send 25c today for catalog and wholesale price list. Refundable first order. Gearon Co., Dept. 500-C4, 27 S. Desplaines, Chicago 6, Ill.

FREE BOOK "How To Make Money With Home Workshop" describes amazing methods used by hundreds of successful craftsmen. Tells what to make, how to sell workshop output spare time. Write at once for details. Remember it's free! Craftsman, 115C-13 Worth St., New York City.

WANT A Diesel Job? New Opportunities to increase income. Higher Pay. More Money. We can help you Qualify. Tools. Shop method home training. Write today! Diesel, Tractor, Heavy Equipment Division, Interstate Training Service, Dept. 4D, Portland 13, Ore.

MAKE MONEY at home with Larson Leathercraft. No experience needed. Easy-to-assemble belts, purses, gloves, etc. Send 10c for big Catalog of 100 ideas. Largest stock in U.S. J. C. Larson Co., 820 S. Tripp Ave., Dept. C81, Chicago 24.

$40.00 WEEKLY, MADE growing mushrooms, Fresh, Dried, Dominion Patent 331583. Free Spawn. North American, 169M Yonge, Toronto, Canada.

MUSHROOMS GROWN. Boxes. Barrels. Instructions 50c. Spawn $1.00. Manureless process. $2.00. Gordin, 328 Bannerman, Winnipeg, Manitoba.

EARN UP to $400 Monthly Raising Angora or New Zealand Rabbits. Plenty Markets. Particulars Free. White's Rabbitry, Newark 57, Ohio.

DETECTIVES—MAKE Secret Investigations. Interesting occupation. Write, George Wagoner, 125-J West 86th, New York 24.

$5000 FROM HALF acre growing Ginseng, crop bought, Particulars 10c. Associated Growers, Sperling, Manitoba.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 28.

WANTED WOMEN to earn money addressing postals. Details 25c. L. Behnke, Guttenberg 88, Iowa.

BOOK "505 ODD, Successful Businesses" free! Work home! "Odd"!! Pacific-24C, Oceanside, Calif.

$100-$200 WEEKLY. NO manufacturing or selling. Mahaffey, 4608-M Russell, Los Angeles 27.

RADIO, TELEVISION, SUPPLIES & INSTRUCTION

BUILD 15 RADIOS—Only $1.30 Each. Experience Unnecessary. Home Radio & T. V. Course, includes Trouble-Shooting and Servicing Lessons, Radio Principals, Code Instructions, Practical Radio Building and Repair. You build and keep Receivers, Transmitters, Amplifiers, Test Equipment, Code Oscillator. All parts, tools, instruction supplied, including Radio Tester and Electric Soldering Iron. Write for full particulars and receive absolutely Free your copy of "Radio & TV Repair Guide." No obligation. Progressive Electronics Co., 497 Union Ave., Dept. MI-16, Brooklyn 11, N. Y.

FREE! 212 PAGE Radio-Television-Electronic Catalog! World's largest stocks, lowest prices. Complete supplies for builders, experimenters, amateurs, servicemen. Latest radios, phonos, television, recorders, sound equipment. Thousands of parts, tubes, test instruments, books, diagrams. Top quality money saving values. Get yours now! Allied Radio Corp., 833 W. Jackson Blvd., Dept. 45-D-2, Chicago 7, Ill.

BUILD, REPAIR Radios, Televisions. Experience unnecessary. Start working immediately. Parts, tools, practical course, twenty dollars. Make good living. Free literature. Steg Electronics, Colchester, Conn.

MAKE IT possible for your present television set to be seen in more than one room. Send $1.00 for simple Diagram and Instructions. TV Mart, 210-04 43rd Avenue, Bayside, Long Island, N. Y.

MAKE SIMPLE, Tubeless, Batteryless Distance-Getting Crystal Radios. Crystal and illustrated instructions 25c postpaid. Allen, 427-M, Clinton, Mo.

TREASURE FINDER

GREAT LAKES Treasure Folder: Maps and pictures showing approximate locations of 33 sunken treasures ($7,889,000.00.) Accurate latitude, longitude, depths and distances shown. Send $2.00 to: Guy Underwater Exploration Ltd., Box 74, Walkerville Ont., Can.

TREASURE-MINERAL LOCATORS—Geiger Counters, extra light weight, ultra-sensitive, lowest cost, credit purchase plan available, factory guaranteed free illustrated literature. Fisher Research Laboratory, Inc., Palo Alto, Calif.

TREASURE FINDERS for gold, silver and minerals. Money back guarantee, best available. Also Geiger counters for uranium prospectors, free information. Write Goldak Company, 1546 West Glenoaks, Glendale 1, Calif.

GOLD AND Silver Detectors, Geiger Counters for Uranium. Mineralights. Powerful—Sensitive—Guaranteed! Free information. Detectron Co., 5631 Cahuenga, North Hollywood, Calif.

PRINTING OUTFITS & SUPPLIES

PRINTING OUTFITS, type, supplies. Send dime for illustrated supply book and samples. Kelsey, Inc., H-57 Meriden, Conn.

PRINTING MACHINERY. Type Supplies. Lists 3c. Turnbaugh Service, Loysville, Penna.

MAKE YOUR own, self-molding, rubber printing cuts. Plexirubber, Argyle 3, Wisc.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 28.

PRINTING, MULTIGRAPHING, MIMEOGRAPHING, ETC.

BUSINESS PRINTING. Samples, prices free. Howprint, 723-D Eunice, Webster Groves 19, Mo.

RUBBER STAMPS

3 LINE; SELF-INKING Pocket Stamp. $1. Bauer-Lee, Sierra Madre 4, Calif.

HOBBIES & COLLECTIONS

COLLECT CARTOPHILIC Cards! New fascinating hobby—Interesting packet containing Birds—Butterflies—Aeroplanes —Flowers—Trains—and other rare cards —Plus big illustrated catalogue—All for 10c. International Cartophilic Co., Dept. MI, 1152 Yonge St., Toronto, Ontario.

BEAUTIFUL SEASHELL Collection $1.00. Large Colorful Red 8" Conch, Abalons $1.25 Coral Imported. Webbs, Route 8, Box 479, Jacksonville, Fla.

COLLECT FINGER Prints. Complete Kit, instructions and police type print cards—$2.00. Universal, 911 Ridge, Rockford, Ill.

INDIAN CURIOS, RELICS, ANTIQUE FIREARMS

1952 HOBBY CATALOG:—Selling 20,000 Indian Relics, Coins, Collectors Cartridges, Confederate Money.—500 Historical Firearms, Revolutionary, Civilwar, Indianwars Flintlocks, Muskets, Rifles, Carbines, Revolvers, Swords, Bayonets, Pepperboxes, Kentucky Rifles, Ramrods, Percussion Caps.—Arrowheads, Spearheads, Gempoints, Bannerstones, Discoidals.—Steerhorn, Elk-antlers, Powderhorns, Eagle-feather, Blowhorns, Bowood, Violin Wood, Winchesters, Blunderbusses, Dueling Pistols, Buffalohorns, Gold Dollars.—Mounted Pheasants, Owls, Rattlesnake, Squirrels, Quail.—Agates, Fossils, Minerals, Dauguerotypes, Ambrotypes, Marineshells. Send 35c for profusely illustrated catalog. Heike, Wenona 15, Ill.

SPECIAL: 10 INDIANHEADS, 68c—5 Arrowheads, $1.23—Tomahawk, $3.88—Battleaxe, $3.78—Civilwar Musket, $28.50 —Civilwar Sword, $12.80—Civ.lwar Bayonet, $1.98—Powderhorn, $9.68—Ramrod, $1.68—Prehistoric Stone Hammer, $2.66—Scalping Knife, $1.88—Percussion Pistol, $21.88—Agate, Pyrite, Fossil, Gastropod, Blastoid, Crinoid, Brachipod, Molybdenum, Geode, Hematite, Coral, Selenite, each $.48. All, $4.90. Heike, Wenona 15, Ill.

OLD STAMPS WANTED

OLD STAMPS Wanted. I will pay $100.00 each for 1924 1c green Franklin stamps, rotary perforated eleven (up to $1,000 each unused). Send 10c for large illustrated folders showing Amazing prices paid for old stamps, coins, and collections. Vernon Baker, MI-24A, Elyria, Ohio.

RARE COINS

WANTED—1894-S DIME pay $500.00. Certain 1913 nickel $1,000.00. 1901-S quarter $20.00 to $150.00. Hundreds of others. Know their true value. Complete Illustrated Catalogue 25c. Worthycoin Corporation (D-322), Boston 8, Mass.

FREE! FOREIGN Coin, banknote and Coin Collectors Illustrated Catalog to approval service applicants. Send 3c postage. Tatham Coinco, Springfield 9, Mass.

DOLLARS, 1878, 1882, 1887, 1888, 1890, 1897, $2.00 ea. Unc. Illustrated Catalogue, Thousands of coins, Bills, etc. 25c. Shultz, Salt Lake 10, Utah.

CLASSIFIED SECTION

INDIAN HEAD Pennies 10 Assorted $1.00. J. C. Geyer, Gen. Del., Santa Barbara, Calif.

STAMP COLLECTING

CANADIAN COLLECTION Free—Includes early Victorian Issues—Jubilees—High Values—Commemoratives—Special Issues—Newfoundlands—Pictorials, etc., etc., together with Philatopic Magazine all free. Send 5c postage. Empire Stamp Company, Dept. MM, Toronto, Can.

GET THIS! Airmail Book plus over 100 Airmail Stamps—only 15c. Thrilling Stories, valuable information on beautiful airmails from the World over including $10,000 airmail—all for 15c! Big Bargain Lists and Approvals. Jamestown Stamp Co., Jamestown 711, N. Y.

310 BRITISH NORTH America Early issues, airmails, commemoratives, all off paper, catalog value over $7.00 with Canadian Price list and Emco Journal included. Send only 25c. Marks Stamp Company, Dept. MI, 92 Adelaide St. W., Toronto, Can.

POLAR BEAR Triangle: Giant George Washington Six Colored Ecuador, Arctic Triangle, First American Commemorative. Corsica, Devils Island, Others. Everything free with approvals. Capital Stamps, Little Rock 5, Ark.

FREE—COMPLETE set of Famous Americans, Flags, Parks and Presidentials to approval buyers. Send 3c for 15 of the above stamps plus full particulars. Triboro Stamp Company, 145 Nassau Street, Dept. 304, New York 38, N. Y.

FREE COLLECTION—over 100 different stamps of world—commemoratives, animals, natives, ships, famous men, others all to approval buyers; also stamp albums, catalogs. Bell Stamp Service, Box 190, Dept. C-2, Bell, Calif.

500 STAMPS FOR Only 10c! This mammoth value includes Airmails, Pictorials; stamps from strange Countries cataloguing up to 25c each! Also approvals. Mystic Stamp Company, Camden 30, New York.

IS YOUR Hobby Too Expensive? Are high prices keeping your collection on the shelf? Try our 1c and 2c foreign approvals in books of 1,000, or U. S. at bargain prices. Clark, Box 544N5, Muskegon, Mich.

COLLECTION AT A Standstill? Let us show you our top quality 1c to 5c approvals. Many satisfied customers. Write today. References appreciated. Roseland Stamp Co., Dept. 8-D, Spring Lake, Mich.

COLUMBIANS, TRANS-MISSISSIPPI, Pan Americans, Pan Pacific, ten other different commemoratives. All 10c with your request for U. S. approvals. Moda Stamps, Box 251-Z, C.S.A., New York 8.

1,031 DIFFERENT STAMPS Including 31 Tanna Touva Triangles, Diamonds, Giants—Valuable, Fascinating Collection—Everything $1.00! Approvals Included. Stampex, 116-D Nassau, N. Y. C.

FREE MINT British Colonies: from Niue, Gilbert Ellice, Nauru, Turks Caicos, Brunei, Caymans, Tonga, Pitcairns, Sarawak—Free with approvals. Viking 130-M, Clinton St., Brooklyn, N. Y.

MAGNIFICENT! NINETEENTH Century U. S. Plus Civil And Spanish War Revenues. 20 Different 10c To Approval Applicants. AAA Stamp Company, Arcade Building, St. Louis 1, Mo.

SCARCE NICARAGUA Roosevelt, Madagascar, Turkey, Martinique, Ecuador, Somali Coast, Cuba. Mints. Send 3c. Silas Stamps, Box 55-Z, Triborough, New York 35, N. Y.

PACKETS WORLD Different 1000 $1.00, 2000 $2.25, 3000 $5.00. Mounted 5000 $13.00, 10,000 $43.00, 20,000 $165.00. Russell, Box 2011E, Natural Bridge, St. Louis 15, Mo.

AZERBIJIAN TO Zanzibar. 100 from 100 different countries. Air Mails, Triangles, Pictorials. For 10c Approvals sent. Brownce, 2007 W. 75 St., Los Angeles 47, Calif.

WORLD'S LARGEST Stamp (7½x14 inches). A real curiosity! Retails for 50c, only 3c to approval applicants. Tatham Stamp Co., Springfield 9, Mass.

WOW! 203 ALL Different Germany 10c! Zeppelins, Semipostals, Airmails, High Values, etc., to new customers. Jamestown Stamp, Jamestown 515, N. Y.

307 ALL DIFFERENT—Only 15c! Beautiful collection: Commemoratives, Triangles, High Values, Bicolored Stamps, etc. Garcelon, Calais 475, Maine.

FREE "STAMP Finder." Tells instantly country to which any stamp belongs. 32 pages profusely illustrated. Garcelon, Calais 10, Maine.

FREE. SCOTT'S International Album. Other big premiums. Full particulars with approvals. Raymax, 68-K Nassau St., New York 38.

OLD SCARCE U. S. Seconds On Approval. Slight imperfections, lowest prices. Hernfelder, Clintonhill Sta., Newark 8, N. J.

FREE! BIG United States Catalog! Invaluable guide and check list. Hundreds of illustrations. Harrisco, Boston 17V, Mass.

U. S. ARMY & Navy Heroes on Stamps; 10c with United States approvals. Locust, Box 305-M, Harmon-On-Hudson, N. Y.

FREE! BIG Illustrated Catalog listing everything for the Stamp Collector. Harrisco, 201 Transit Bldg., Boston 17, Mass.

100,000 STAMPSATIONAL GRABBAGS, 25c each!! Niagara Stamp Company, 35 Queensway, Niagara-on-the-Lake, Can.

200 DIFFERENT, INCLUDING Roosevelt triangle. 5c to approval applicants. K. Avalon Stamp Co., Springfield, Mass.

BOOKS OF 1000 selected stamps, 1c—2c each! Niagara Stamp Company, 31 Queensway, Niagara-on-the-Lake, Can.

GOYA NUDE! Jesus Christ sets! Roosevelts! 1005 others! $1.00 with Approvals! Otto's, Box 634, El Cerrito 10, Calif.

OUTSTANDING OFFERS. The Stamp World 10c. Finest U. S. Mixture. 500 20c. Sibley, Mendon, Mass.

1000 DIFFERENT WORLDWIDE Plus Colorful Greek Set Only $1.00. Balian, Box 901-A, Syracuse 1, N. Y.

500 MIXED STAMPS and Surprise Packet for 10c with approvals. Fahsing, Dept. MI, Atascadero, Calif.

40 DIFFERENT U. S. 10c; 40 different U. S. Commemoratives 25c. Seidenberg, Appleton 944, Wisc.

START YOUR Own Stamp Business. Send for free circular. Donald Shepard, Box 1147, Chicago.

HOW TO Recognize Rare Stamps. Free Book Illustrated! Kenmore, Milford, H-59 N. H.

HYGRADE U. S. approvals priced to please. Weenigman, 1933 Patterson, Chicago 13.

50,000 STAMP GRABBAGS 25c each. Anderson, 630C, Bingaman, Reading, Penna.

FREE U. S. price list, postage 3c. Mark Hanna, 335 5th Ave., Pittsburgh 22, Penna.

FREE! AMAZING hidden Deathmask Stamp of Serbia. Garcelon, Calais 206, Maine.

FREE!! AMAZING "Queer Countries" Packet—with approvals! Saxon, Vista, Calif.

½—1—2c APPROVALS. BARGAINS Galore! Cole, 43J Rinewalt, Buffalo 21, N. Y.

FREE! POWERFUL Magnifying Glass. Jamestown Stamp, Jamestown 229, N. Y.

RUSSIAN 250,000 RUBLE stamp plus 311 others 10c. Goliath, Bethlehem 4, N. H.

750 FRANCE AND Colonies stamps 10c. Littleton Stamp Co., Littleton 27, N. H.

500 EXOTIC JAPAN Stamps—10c! Kenmore, Milford, J-59 N. H.

ALBUM! HOLDS over 1000 stamps! Only 10c!! Stampmart, Hartford 1, Conn.

500 STAMPS 10c TO Approval applicants. M. Wineholt, Woodbine, Penna.

BIG U. S. illustrated catalog free. Stone, 45 Bromfield, Boston 8, Mass.

NUDES SET and colorful approvals—10c!! Atlas, 2830-n Eisenhower, Racine, Wisc.

FREE—ILLUSTRATED Catalog! Kenmore, Milford, C-59 N. H.

BODY-BUILDING COURSES

"POLICE JIU Jitsu" Authentic, illustrated, $1 postpaid. Satisfaction or money back. Books Publishing Co., 56-D W. 24th St., New York, 10.

CHALK TALKS

TRICK CHALK Stunts. Catalog 10c. Cartoonist John Balda, Oshkosh, Wis.

DETECTIVES

PREPARE FOR career in private investigation or public law enforcement work. Write for free booklet. National Detective Academy, 239M S. Oxford, Los Angeles 4, Calif.

DETECTIVES—WORK home—travel. Experience unnecessary. Detective Particulars free. Write, George Wagoner, J-125 West 86th, New York 24.

DETECTIVE TRAINING. Phillips Secret Service System, 1917-G North Kenneth, Chicago 39, Ill.

MAGIC TRICKS, JOKERS, PUZZLES

512-PAGE CATALOGUE of 2500 tricks, pocket, parlor, stage. World's Finest Magic. Send $1.50 for catalogue (refunded first $6.00 order). Kanter's, R-1311 Walnut, Philadelphia 7.

LATEST MAGIC for pocket, parlor, stage. Catalog 500 tricks, only 10c. Unequalled magic service for 30 years. Douglas Magicland, Dept. 3, Dallas, Texas.

MINDREADING MYSTERIOUS yet simple trick. Send Dollar to Al Snyder, 169 Norfolk Street, New York 2, N. Y.

BE A Magician. Large professional magic catalog of latest tricks, 35c. Ireland, 107 North Dearborn, Chicago 2.

FREE TRICK And Large Illustrated Catalog 35c. Lerro's Magic Shop, 8111 Fifth Avenue, Brooklyn 9, N. Y.

FREE TRICK With Illustrated Catalog 10c. Maj Magic Products, 23-M Friends Lane, Westbury, N. Y.

VENTRILOQUISM SELF Taught. Quick, easy instructions, 25c. Lederbrand, Cal Allen 2, Texas.

16 WORLD'S BEST card tricks and catalog 25c. Sterling Magic, Royal Oak, Mich.

HYPNOTISM

STUDY HYPNOTISM! Amazing Illustrated lessons. Simple understandable language. This course tells how practical hypnotism is performed: over telephone, on stage, conquering timidity, dominating others. Full price only $2.95, postpaid; or C.O.D. plus postage. Satisfaction or refund. Order "Hypnotism Course" today. Nelson Company, 210 S. Clinton, Dept. 2D-3, Chicago 6.

"25 LESSONS IN Hypnotism" $1 Postpaid. Satisfaction or money back. Books Publishing Co., 56-B W. 24th St., New York, 10.

HYPNOTISM, SAMPLE lesson free! Write Baltimore School of Hypnotism, Dept. 204D, 4214 Belmar Avenue, Baltimore 6, Md.

MUSIC INSTRUMENTS & INSTRUCTION

SONGWRITERS: PROTECT your ideas! Do not mail material! Write for safe publisher procedure First! Song Service, Dept. MI, 333 West 56th Street, New York 19, N. Y.

POEMS WANTED for musical setting. Send poems for free examination. Five Star Music Masters, 629 Beacon Bldg., Boston, Mass.

SONG POEMS wanted to be set to music. Send poems. McNeil, Master of Music, 510 MI South Alexandria, Los Angeles, Calif.

POEMS WANTED. Broadcast consideration. Sooner Songs, 22 MI Northwest 8th, Oklahoma City 2.

SONGWRITERS! SEND poems, songs. Music Service, MI, 243 West 72nd St., New York 23.

SONGWRITERS! OUTSTANDING, ethical offer. Hibbeler, C-32, 2157 N. Avers, Chicago 47.

ELECTRIC GUITARS, amplifiers, wholesale. Free catalog. Carvin, MI, Baldwin Park, Calif.

SHEET MUSIC 10c; 12 for $1.00. Irving Siegel, Marshfield, Wisc.

TATTOOING

TATTOOING OUTFITS. Supplies. Illustrated list 25c. Zeis, 728 Leslie, Rockford. Ill.

VENTRILOQUISM

LEARN VENTRILOQUISM. 3c stamp brings particulars. Smith, Dept. 250, 801 Bigelow, Peoria 5, Ill.

BOOKS, PERIODICALS, PICTURES, POSTCARDS

MAGAZINES (BACK Dated)—Foreign, Domestic—Arts, Books, booklets, subscriptions, etc. Catalog 10c (refunded). Cicerone's, 86-22 Northern Blvd., Jackson Heights, N. Y.

BOOKHUNTERS! ALL Subjects. Send Wants! Jaher Book Service, 620-M East 178 Street, New York 57.

LOOKING FOR A Book Publisher? Write for free booklet MX2. Vantage Press, 230 West 41, N. Y.

SAVE ON magazine subscriptions! Bedard Publications, Dept. M.I., Box 637, Detroit 31, Mich.

CAMERAS, EQUIPMENT & PHOTO SUPPLIES

FREE PHOTOGRAPHIC Bargain Book packed with hundreds of sensational values in still and movie cameras, lenses and latest accessories. Super savings for you in new and used equipment. Liberal trade-in allowances, too, on your equipment. Write now for your free copy to Central Camera Company, Dept. 13D, 230 S. Wabash Ave., Chicago 4 (Photographic Headquarters Since 1899).

PHOTOCOPY ANYTHING — Papers, Books. No dark room. 8½" x 11" complete $6.95. Fotoflek, 8555 Plainfield Lane, Cincinnati 36, Ohio.

HOME MOVIES

GUARANTEED FRESH 8mm roll, magazine; 16mm roll, magazine movie films. Color, b&w. Free catalog, ESO-S, 47th Holly, Kansas City 2, Mo.

UNUSUAL 8-16MM. Movies. Full-color projection length sample, $1.00. Color Tru-Art Slides, three samples $1.00. Big catalog, 25c (refundable). National Film Supply, Toledo 9-K, Ohio.

MOTION PICTURES & SOUND EQUIPMENT

WORLD'S BIGGEST selection of new and used 16mm. sound and silent films—over 100,000 prints on hand! Everything at bargain prices—savings of 50% and more are commonplace! Good used 16mm. sound projectors—Bell and Howells, Victors, Ampros—frequently available for as little as $139.95. Reels, cans, supplies at bargain prices! Write today for your free copy of Blackhawk's big 24-page catalog. "Sixteen's Super Market." Blackhawk Films, Inc., 1307 Putnam Building, Davenport, Iowa.

8-16MM SILENT-SOUND Films. Complete rental library. All latest subjects. Free catalogue, (sample film 10c). Garden Film, 317 West 50th, New York 19.

8MM. BARGAINS — Blackhawk's new 8mm. catalog really has them! Films, supplies—everything at a saving! Good used 1-reel 8mm. films frequently available at $1.98. Blackhawk Films, Inc., 1308 Putnam Building, Davenport, Iowa.

5,000 NEW-USED 8-16MM. Silent-Sound Films. International, Dept. MI, 2120 Strauss, Brooklyn, 12.

AUTOMOBILES—MIDGET CARS

AUTOMOBILE TOPICS, established 1900, oldest automobile magazine in America, now owned and published by Floyd Clymer. More interesting than ever. Clymer's foreign car and Auto Show survey, French, German, Swedish, Italian, English, Russian cars. (Clymer's report behind the Iron Curtain.) Feature articles, technical information. U. S. Production figures and news direct from World's motor capitol—Detroit. Custom, racing, production news. Now revised for the automotive industry and car owners. Limited time offer $5.00 per year. $8.00 two years. Includes Free $2.00 Clymer Motorbook as gift. Floyd Clymer Publications, 1268 S. Alvarado M. I., Los Angeles, Calif.

1952 "SPEED EQUIPMENT Catalog!" Save, order direct—Hollywood Mufflers $4.95, Dual Mufflers $18.95, Headers $27.50, Cut Outs $6.95, Dual Intake Manifolds $12.95, Racing Cams $29., Hi-Compression Heads $18.95, Water Injectors $5.95, Customizing Kits $1.98, Chrome Accessories at discounts! Catalog plus "Hot Rod Handbook"—25c. Almquist Engineering, Milford 44X, Penna. (Dealers Wanted)

SAVE—CALIFORNIA custom accessories headquarters. Buy direct from original designers. Chrome dash panels, electric push button door-trunk conversions, fender skirts, dual mufflers, lowering kits, speed-dress up equipment. 40 page catalog. Hundreds of photos—25c. Eastern Auto, 3319G South Grand, Los Angeles 7, Calif.

FROM SPEEDWAY To Roadway! Track-proved Hi-Speed Heads and Manifolds for your passenger car! No special tools needed! Increase Horsepower 30%! Astounding Getaway! Free Illustrated Catalog. (Dealers Wanted). Speedsport, 4866-G Milwaukee, Chicago 30.

SURPRISE PACKAGE "On Approval." Send only name and address. Pay $1.00 later (without Money) if delighted. Octa-Gane. San Gabriel 15, Calif.

BUY RACING heads, dual manifolds. Hot Coils, etc., without money. Information free. Newhouse Automotive Industries, Los Angeles 22.

"WATER INJECTION." Also—Economy —Power—Methods. Free illustrated information. Neher Industries, La Verne 2, Calif.

NEWHOUSE MAKES another sensational offer. See page 178. Don't miss it.

AUTO SUPPLIES & EQUIPMENT

1952 EDITION. IT'S New! It's Different! Get world's largest Auto Accessory & Parts Catalog and save money. 100 pages. Over 50,000 items, including Hollywood Accessories, Hi-Speed Equipment, Rebuilt Engines, all parts and accessories for all cars and trucks. We have that Hard-To-Get part! Jam packed with bargains. Completely illustrated. Send 25c (refundable). J. C. Whitney, 1919-Z Archer, Chicago 16.

AMERICAN MOTORSCOOTER $20, Cushman $35, Comet $35. Others as low as $12.50 less engines, engines $5 up. British MG, less running gear $75. (Mailorder only). Send 25c for Catalogue 46, just out, listing these and hundreds of other bargains in new and used midget cars, motorscooters, parts for homebuilders, plans, etc. (35c by First Class Mail). Midget Motors Directory, Athens, Ohio.

REMANUFACTURE YOUR automobile or truck engine for less than one-half new engine cost. One year or twelve thousand mile guarantee. Factory direct to you. Write today, information by return airmail. Skaggs Bros., Dept. B, 5425 South Vermont Ave., Los Angeles 37, Calif.

YES, IT puts babbitt type bearings on the pistons for 100,000 miles. Lachapelle's patented treatment. $3.00 your dealer or postpaid. Ferns Products, 8120-K Walnut Dr., Los Angeles 1, Calif. (Data on request.)

CHEVROLET VALVE Tappet Silencer '37-'52 Models, Simple Installation, You'll Be Amazed At Tappet Quietness. $2.95 Postpaid. K. & I. Engineering, 215-255 Manistique, Detroit 15, Mich.

BRAKE FLOATERS for Chevrolet, Ford and Mercury Cars insure more powerful brakes, soft pedal, cure squeal. Write Super Brake-Floater Company, 4022 West Lake Street, Chicago 24.

MORE POWER, speed, mileage for cars, trucks and tractors. Guaranteed Vaporizer. $2.00 prepaid. Jim Dandy Vaporizers, Box 3557, McKellar Sta., Memphis 6, Tenn.

TRANSMISSIONS. USED, Rebuilt. All makes of cars 1928 to 1948. Hot Rodders Attention. Hydraulic Brake Conversion $25.00. Happy Auto Parts, Madison, Ill.

CALLING ALL motorists. Join the Gane Economy Club. Buy auto accessories at discount. No dues or fees. Free Descriptive literature. Gane, Webster, N.Y.

FIBERGLAS—PLASTICS for custom bodies and hard tops. Instructions and complete supplies. Industrial Plastics, 4425 Linden Street, Oakland 8, Calif.

OVERDRIVE SIG-NA-LITE flasher fits all cars with overdrive. Saves gas, no forgetting. $2.95 complete. Quality Products, 5227 Parker, Chicago 39, Ill.

MOTORIST SAVE gasoline by Vacu-mating overrich mixtures. Fits all cars. For free particulars write Vacumatic, Dept. 1871, Wauwatosa, Wisc.

"HOW TO Soup-Up Your Car"—Hot Rod Handbook plus Equipment Catalog—25c postpaid. Almquist Engineering, Milford 45X, Penna.

"HOW TO buy speed equipment without money." No selling. Information free. Newhouse Automotive Industries, Los Angeles 22.

MAKE YOURSELF Super Device, Saves 45% gasoline guaranteed. Purifies oil. Plans $2.00. Mike Brodie, Vilna, Alberta.

MORE SPEED, mileage, power. Guaranteed vaporizer $5.00. C. Kaldus, 132 Hamilton Ave., Greenwich 1, Conn.

AIR HORNS! Sirens. Bermuda Bells. Free catalog. Dave McCanna, 148½ East 40th, New York 16.

CLASSIFIED SECTION

SEND FOR free life membership card. "Water Burners" of America, La Verne 2, Calif.

LIGHT YOUR Powerglide Dial. Free Information. Gaiser, Box 25C, Kokomo, Ind.

AUTO TRAILERS

BUILD YOUR Own Trailer! Plans for all kinds. Illustrated Catalog 10c. Jim Dandy, 125-K, Wausau, Wis.

MOTORCYCLES, BICYCLES, MOTOR SCOOTERS

CATERPILLAR JUNIOR Crawler Tractor —Electric motor driven! Rugged full-track pulls loads easily over lawns, fields, pavements. Most sensational child's vehicle made! Catalog free. Mystic River Sales Co., Box 312-L, Mystic, Conn.

RECONDITIONED MOTORCYCLES and motors. Chromium accessories. Complete stock Indian parts. Expert rebuilding. Fast Service. Indian Motorcycle Sales, Kansas City 1, Mo.

MOTORCYCLE MAGAZINE—Worldwide coverage. Yearly Subscription $2.00. Sample 20c. Motorcycle News, 5424-C Sawyer, Chicago 25.

ELECTRICITY & ELECTRICAL SUPPLIES

FREE—WAR Surplus Catalog—Bargains Galore. Welders, Motors, Generators, Hydraulics, Pumps, Kits for assembling your own, other items. Save. LeJay Company, Minneapolis, Minn.

LAMPS—HAD trouble finding repair parts? Your search is ended. 25c brings 64 page illustrated catalog containing wiring charts. Gyro Lamps, 5402M Clark, Chicago 40.

TROUBLESHOOT FRACTIONAL h.p. motors with this rugged tester. Instructions included, $4.95. Test-A-Motor Company, Box 902, Milwaukee 1, Wisc.

ELECTRIC PENCIL: Engraves all Metals, $1.50. Beyer Mfg., 10511-G Springfield, Chicago 43.

MACHINERY, TOOLS & SUPPLIES

HI-SPEED-IT. NON-TOXIC hardening compound. Quick, proven hardener for any steel. See article August *Mechanix Illustrated*. 2 oz. hobby can now available. $3.00 postpaid. Shop Equipment Co., Box 86, Village Sta., New York 14, N. Y.

WELDING—PLATING—SOLDERING

BUILD YOUR own electric welder-brazer, simple-inexpensive. Complete plans-details $1.00 postpaid. R. Knosp, 309 N. Corona Ave., Valley Stream 10, N. Y.

FOR INVENTORS

INVENTORS: LEARN how to protect your invention. "Patent Guide" containing detailed information concerning patent protection and procedure together with "Record of Invention" form will be promptly forwarded to you upon request —without obligation. We are registered to practice before the U. S. Patent Office and prepared to serve you in the handling of your patent matters. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 23A-D District National Building, Washington, D. C.

SEARCHES—PUT your patent searches in the hands of a Registered Patent Attorney or Agent, as he qualifies to give a worth-while patentability report. Record of Invention form upon request and information on patent protection. Patrick D. Beavers, Registered Patent Attorney, 925 Columbian Building, Washington 1, D. C.

INVENTORS—IF you believe you have an invention, you should find out how to protect it. The firm of McMorrow, Berman & Davidson with offices in Washington, D. C., is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention." We will also send you an "Invention Record" form. No obligation. They are yours for the asking. McMorrow, Berman & Davidson, Registered Patent Attorneys, 1385 Victor Building, Washington 1, D. C.

INVENTORS—THIS firm is registered to practice before the United States Patent Office and is available to assist you in the preparation and prosecution of your patent application. "Patent Protection for Inventors" booklet containing detailed information and steps to take toward patent protection will be sent upon request. No obligation. Victor J. Evans & Co., 770-D Merlin Building, Washington 6, D. C.

PATENT SEARCHES $5.00. 48-hour air-mail service. Patent Applications, Drawings and Amendments prepared. Free Record of Invention. Write Patent Engineering Service, 1404 New York Avenue, N. W., Washington 5, D. C.

PATENT SEARCHES $5.00. 48-hour service. Lowest rates on preparation of patent applications. Invention protection forms free. Write Raymond L. Smith, 410 Bond Building, Washington 5, D. C.

PATENT SEARCHES, $5.00, including patent copies. Free protection forms. Complete inventor's services. Patent Service Institute, 945-G Pennsylvania Avenue, Washington 4, D. C.

PATENT SEARCHES $5.00. 48-hour service. Patent Applications and Drawings prepared. For free Record of Invention forms write Miss Ann Hastings, P. O. Box 176, Washington 4, D. C.

AMAZING $$$ SAVING invention book. Everything you need to know about inventions — patents — marketing, $1.00. R. W. Hodgson, 6600 Lexington Ave., Hollywood 38, Calif.

INVENTORS: IF you have an invention for sale, patented or unpatented, write Institute of American Inventors, Dept. 508, 631 E Street N. W., Washington 8, D. C.

INVENTORS—DEVELOP and market your invention through unique plan. Free literature. Inventors' Intermediaries, 11 West 42nd St., New York 18, N. Y.

CASH FOR your idea, 280 manufacturers need inventions, patented or unpatented. List free. Invention Bureau, 208-X Clinton, Oak Park, Ill.

INVENTORS. FOR "INVENTION RECORD" form, contact Carl Miller, Registered Patent Attorney, Woolworth Building, New York.

SELL INVENTIONS, Ideas Without Patent Protection. Legal Forms, Instructions $2.00. Elco, 2nd Floor, 5629 Lake, Chicago 44.

INVENTIONS PROMOTED. Patented or Unpatented. Established 1911. Write Adam Fisher Company, 582 Enright, St. Louis, Mo.

INVENTORS, MACHINISTS, Hobbyists need iron castings? Inquire Foundry, Leesburg, Ind.

INVENTIONS WANTED

INVENTORS: HUNDREDS of manufacturers have requested our assistance in locating marketable new products. Complete information, free. Institute of American Inventors, Dept. 50-C, 631 E Street N. W., Washington 8, D. C.

NEW ITEMS Wanted—From manufacturers or inventors for manufacture new, unusual items suitable for mail order, promotion or general distribution. Send samples or details. H. D. Campbell Co., Rochelle 26, Ill.

INVENTIONS WANTED: Patented or Patent Pending. 21 years' experience Promoting Inventions. National Service Bureau, 3126 Meramec, St. Louis 18, Mo.

INVENTIONS WANTED by Manufacturers. Patented-Pending only. Free Details. Inventors Exchange, Dept. C, Hartford 1, Conn.

INVENTIONS FOR SALE

TOY MANUFACTURER interested in producing inexpensive Patented Animated Wheel Toy. Contact Vince Brown, Big Stone City, So. Dak.

INVENTIONS SOLD, Leased, Complete Services. M. Joyce Humphries, Landtitle Philadelphia 10, Penna.

MODELS & MODEL SUPPLIES

HOME MODELS and Doll Houses are fun to build—profitable to sell—with our accurately scaled, pre-fabricated materials. Send 10c for samples and booklet, "How You Can Build Model Homes." Architectural Model Materials, Inc., Dept. J-42, 4208 Armitage Ave., Chicago 39.

SHIP AND Yacht Model Fittings. Send 25c for 40 page illustrated catalog. A. J. Fisher, 1002-B Etowah Ave., Royal Oak, Mich.

ROUGH BALSA blocks, planks, bulk, 3 lbs. $1. Thomas Gudmestad, 14 Barba Terrace, Linden, N. J.

BALSA WOOD—All dimensions. Free folder. Sig Mfg. Co., Montezuma, Iowa.

MODEL RAILROAD Catalogs Free. Shannon's Hobby, 503A Franklin, Nutley 10, N. J.

PATENT ATTORNEYS

INVENTORS: LEARN how to protect your invention. "Patent Guide" containing detailed information concerning patent protection and procedure together with "Record of Invention" form will be promptly forwarded to you upon request —without obligation. We are registered to practice before the U. S. Patent Office and prepared to serve you in the handling of your patent matters. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 23B-D District National Building, Washington, D. C.

INVENTORS—IF you believe you have an invention, you should find out how to protect it. The firm of McMorrow, Berman & Davidson with offices in Washington, D. C., is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention." We will also send you an "Invention Record" form. No obligation. They are yours for the asking. McMorrow, Berman & Davidson, Registered Patent Attorneys, 1386 Victor Building, Washington 1, D. C.

INVENTORS: WHEN you are satisfied that you have invented something of value write me, without obligation, for information as to what steps you should take to secure a Patent. Write Patrick D. Beavers, Registered Patent Atty., 924 Columbian Bldg., Washington 1, D. C.

INVENTORS: INFORMATION on patent procedure furnished on request, without obligation. John Randolph, Registered Patent Attorney, 210 Columbian Building, Washington 1, D. C.

INVENTORS. FOR "INVENTION RECORD" form, contact Carl Miller, Registered Patent Attorney, Woolworth Building, New York.

C. A. SNOW & CO., 1-427 Snow Bldg., Washington 1, D. C. Registered patent attorneys. Literature mailed on request.

"INVENTOR'S GUIDE" free. Frank M. Ledermann, Registered Patent Attorney, 154 Nassau Street, New York.

PATENTS

PATENT OFFICE searches $5.00, including copies of nearest patents. Same reliable searches we conduct for patent attorneys. 48 hour airmail service. Protection forms free. Capitol Patent Service, Box 664-X, Washington 4, D. C.

INVENTORS: TEST the Commercial value of your patented or unpatented inventions, quickly and inexpensively. Write for free information. Institute of American Inventors, Dept. 50-A, 631 E Street N. W., Washington 8, D. C.

INVENTIONS PROMOTED. Patented or Unpatented. Established 1911. Write Adam Fisher Company, 582 Enright, St. Louis, Mo

BOATS, OUTBOARD MOTORS

FASTEST BOATS In The World! Build your own Champion Boat or let us build you a custom-made racer or family runabout. Send 25c today for catalogue of easy-to-follow plans for 3 point hydroplanes, runabouts and others. Dealer inquiries invited. Champion Boats, 1524 W. 15th St., Dept. 21-P, Long Beach 13, Calif.

FULL SIZE cut to shape patterns, blueprints, $3.75 up. Pleasure boats, to 38 feet. Illustrated "Build a Boat" catalog, 25c. "How to Build Boats" book $1.00. Polywog Houseboat Plans, $10. Marine Catalog $1.00. Cleveland Boat Blueprint Co., Dept. A-23, Cleveland 13, Ohio.

OUTBOARDS—COMPLETE plans for all types. Racing, Sporting or "Just Fishin'." Stop wishing—start building. Free circular, individual suggestions. Write today. E. G. McCrea, Designer, Box 141-A, North Hatley, P.Q., Can.

GET OUR big 228-page 1952 marine hardware, boat and equipment catalog. Send $1.00 for packing and mailing, refunded with first order. Garland Frasher Marine Sales, 540-G 31st Street, Huntington, W. Va.

MARINE CONVERSIONS for Ford and Jeep engines. Catalog 10c. Lehman Manufacturing Company, 972C Broad Street, Newark 2, N. J.

NEW, USED, rebuilt marine motors. Marine conversions, fittings. FREE catalog. Stokes Marine Supply, Dept. 21, Coldwater, Mich.

FOR THE HOME

STOP FAUCET Leaks. Snap-In swivel washers as featured in Reader's Digest 4 for $1.00 postpaid. Paul Snyder, Boyne Falls, Mich.

BUILD-IT-YOURSELF

BIRD HOUSE Kit ready to assemble. Size 7¼ x 4½ x 6. Nails, instructions included, $1. Assembled, $2. Postpaid. Brendavid Woodcraft, Patricksburg, Ind.

FREE HANDBOOK, build sawmills, block machines, freezers, tractors, scooters, 250 shop, farm, home, machines. Nichols Co., Dept. C-1285, Purvis, Miss.

FIBERGLAS CAR Bodies, etc. Informative booklet of Construction Hints "Where to Buy" $1.00. Goldayne, 3356 Glendale, Los Angeles 39.

$750 BUILDS COZY 4 Rooms and Bath. Concrete Block, Stuccoed. Instructions and Blueprint, $1.00. Farrow, G87, Box 645, Columbus 16, Ohio.

"CONCRETE BLOCK Homes." 32 page booklet on how to build, $1.00. H. C. Lightfoot, Civil Engineer, Richboro 25, Penna.

WHEELS—CASTERS! For Farm, Home, Industry. All types and sizes. United Cycle, Dept. M2-4, Somerville 43, Mass.

BUILD YOUR Own "Tractor." Free information. Eltraco, D-9, Camptonville, Calif.

ROUND STOCK & Pipe Jaw For Standard Vise. See Page 178.

HOME CRAFTSMEN

28 LAWN ORNAMENT patterns 25c. Other patterns: 15"-20" high; Dutch girl; Dutch boy, pirate, bull terrier, Mexican girl, Mexican boy, dwarf, penguin, flower girl, 10c each; 3 for 25c. 25 novelty patterns 30c. All 62 full size patterns $1.00 postpaid. Strother, Box 128-YP, Belington, W. Va.

FREE BOOK "Practical Painting, Wood Finishing" shows how to get professional results. Furniture finishing, workshop projects, home decorating. Complete. Modern brush and spray methods. Tricks you've never seen. It's Free! Write Home Craftsman, 115-F Worth Street, New York 13.

HAVE FUN! Make Money! "Working with Leather," 64-page booklet tells how. Send 25c for copy. Free gift if you mention this magazine. Valuable information included. No foreign orders. Wilder & Company, 1037 Crosby, Chicago 10.

OUR BIGGEST Leather and Craft Catalog yet! 1000's of items. Send 25c (refunded with 1st order). Russo Handicraft Supplies, Dept. 4X, 245 S. Spring, Los Angeles, Calif.

16 NEW LAWN chairs, 22 picnic tables, benches, trellises, etc. All 38 plans with necessary full size patterns, $1.00. Mastercraft 43X, 7041 Olcott, Chicago 31, Ill.

JIGSAW OWNERS Attention! Start earning money at home cutting out wooden novelties and souvenirs. Write H. Cook, Dept. B, 4407 S. Normal Ave., Chicago 9, Ill.

89 FULL SIZE Jig Saw patterns of beautiful shelves, ornaments, toys, novelties. Plus "How, Where to Sell." Only $1.00. Mastercraft 44X, 7041 Olcott, Chicago 31, Ill.

LEATHERCRAFT, TEXTILE Painting, Beadcraft, Shellcraft. Many other crafts. Big free catalog shows everything you need. Kit Kraft, 7377 Melrose, Hollywood 46, Calif.

CESSPOOL TROUBLE? Use Peps-It. Revitalizes fermentation action. Write for free details. Electric Cesspool Cleaning Co., Allston 34, Mass.

90 ALL NEW, full size lawn ornament and novelty patterns, up to 20" high. Only $1.00. Mastercraft 42X, 7041 Olcott, Chicago 31, Ill.

JIGSAW, BANDSAW owners, let your machine bring extra profits, fun. Free details. Nu-Art, Dept. D, Box 2235, Boston, Mass.

100 FULL SIZE Jig Saw Patterns Up To 20" High, Only $1.00. Pattern Service, Medway 11, Mass.

ROUND STOCK & Pipe Jaw For Standard Vise. See Page 178.

SPORTING GOODS, FISHING TACKLE, GUNS

TENTS, CANVAS; direct from manufacturer. Also war surplus. Camping equipment, sleeping bags. Tremendous selections. Free catalogue. Low prices. Morsan Sales, Dept. M1-2, 10-15H 50th Avenue, Long Island City 1, N. Y.

AUTOMATIC FISHHOOK sets hook automatically when fish strikes. Sensitivity adjustable. Instructions $1.00 each postpaid. F. E. Fisher, 305 Linden, Waterloo, Iowa.

MOLDS—FOR casting your own fishing sinkers. Free illustrated booklet. Reading Instrument Co., Box 78, Reading, Penna.

NATIONALLY ADVERTISED fresh water fishing tackle at tremendous savings. Booklet Free. Althorne "Carrjr" Co., Medway, Mass.

SHOTGUNS, RIFLES, revolvers, over 500 modern, obsolete, list 10c coin. Ed Howe, 28 Main, Coopers Mills, Maine.

5000 BARGAINS, FIREARMS, Binoculars, War Relics. Catalog 50c. Smith Armory, Runnemede, N. J.

PLASTICS

NEW LIQUID Casting Plastic. Clear, colors. Embed flowers, insects, coins. Saw, drill, carve. Send 25c for Wholesale Catalog and New Sales Manual showing how to make money at home. Castolite, Dept. D-104, Woodstock, Ill.

LUCITE, PLEXIGLAS. Any size sheets, marked. Square foot (12 x 12) cost, 1/16", $1.09; ⅛", $1.40; 3/16", $1.75; ¼", $2.08. Include 10% postage. Almac Plastics, 230 Fifth Avenue, New York 1, N. Y.

LEARN PLASTICS At Home. Small cost—spare time. Dime brings sample plastic, three experiments, full details. Plastic Projects, Box 5151, Detroit 35, Mich.

PLASTIC, SHEETS, rods, tubes, etc. Free list. Plastic Supply Co., 2901 N. Grand Blvd., St. Louis 7, Mo.

BINOCULARS, TELESCOPES, MICROSCOPES, ETC.

WAR SURPLUS Bargains, Binoculars, Telescopes, Sextants, Millions of Lenses, Prisms, Reticles, Eyepieces, Objectives, etc. Mail 10c for Big "Catalog CB." Send $1.00 for stock CB—10-piece Lens Kit and Big Instruction Booklet. Edmund Scientific Corp., Barrington, N. J.

POWERFUL ASTRONOMICAL telescopes easily made. Perfect lenses and instructions; 100X $3.00; 100X and 200X $4.00; 100X, 200X and 400X $6.00. Full power, clear vision. Instructions alone 10c. Suffolk Science, Riverhead, N. Y.

"FREE" CATALOGUE! Thousand war surplus optical bargains. Lenses, Prisms, Telescopes, Binoculars, etc. Send $1.00 for 10 lens Hobbyist Set and Project booklet. R. Jaegers, 93-08 95th Avenue, Ozone Park, 16, N. Y.

3 x 40 ACHROMATIC-BINOCULARS—Special bargain $8.95, tax included. Also powerful precision binoculars $2.25—all postpaid. Solarscope, Box 176, Detroit 2, Mich.

BINOCULARS, TELESCOPES, microscopes. Our 20th year of leadership in optical values. Bargain catalog free. Brownscope Co., 24 West 45th Street, N. Y.

REFLECTING TELESCOPES, 60X completely assembled $29.75. Guaranteed observatory clearness. Free information. Skyscope, 475 Fifth Avenue, New York 17.

REFLECTOR TELESCOPE kits, refractors. Free illustrated bulletin. Esco Products, 911 Willow Ave., Hoboken, N. J.

10" REFLECTOR. 4 EYEPIECES, finder. Portable. $175. Box-711, Goleta, Calif.

DOGS, BIRDS, FROGS

NATURALIST'S CATALOG 10c. 200 Mealworms $1.00. Chameleon 55c. Salamander 50c. Quivira Specialties, Topeka 35, Kans.

ST. BERNARD Pups! Beauties. Reg'd. Details, prices, charming pictures free. Manitou Kennels, Watrous, Sask., Can.

CLASSIFIED SECTION

HORSE TRAINING

"HOW TO Break And Train Horses"—A book every farmer and horseman should have. It is free, no obligation. Simply address, Beery School of Horsemanship, Dept. 1154-C, Pleasant Hill, Ohio.

POULTRY

BABY CHICKS, America's finest, 50 varieties, 8 crossbreeds, bloodtested, sexed or unsexed, low prices. Gorgeous poultry book free. Berry's Farm, Route 11, Clarinda, Iowa.

RABBITS—HAMSTERS

A PRACTICAL Beginning To Successful Rabbit Raising. 48 Page Illustrated Booklet. Dime. American Rabbit Breeders Association, 55 AR&CBA Bldg., Pittsburgh, Penna.

STEADY EARNINGS With Angora Rabbits. Free illustrated booklet tells how, lists markets, successful raisers. Angoraville, 170 E. Butler, West St. Paul, Minn.

EARN UP To $400 Monthly Raising Angora Or New Zealand Rabbits. Plenty Markets. Particulars Free. White's Rabbitry, Newark 56, Ohio.

MAKE BIG Money! Raise Chinchilla Rabbits. Cash Markets Supplied. Write Today! Rockhill Ranch, Sellersville 48, Penna.

MAKE BIG Money! Raising Pure Bred Angora Rabbits. Free Literature. Write Langdon's, Box 123, Benson, N. C.

RABBIT MAGAZINE. Illustrated. Year, $1.00; Sample, Dime. B-5142, Miami 29, Fla.

BIG PROFITS—Raise Guinea Pigs. Free Booklet. Taylors, B426E, Hapeville, Ga.

REAL ESTATE, FARM LANDS

FLORIDA RANCHOS $295. Pay $10 monthly. Extra large, beautiful, combination Homesite and Garden Tract. High and dry. In famous Panama City Pleasure Resort Area. World's finest beaches. Lovely lakes. Wonderful fishing, hunting. Grow fruits, berries, nuts, vegetables, poultry. Electricity. Get your attractive Rancho Now in this desirable fast-growing Community. Booklet Free! Mort Wood, Box 873, Houston, Texas.

CALIFORNIA — OREGON — Washington Land. Acres and acres of Virgin Soil. Ideal for farming, ranching, resorts, etc. Sacrificed for Delinquent County taxes. Your opportunity to buy now from $5 to $10 per acre full price, including 100% Oil and Mineral rights. Send 10c (coin) for Full Details, Catalog, Photos. Pacific Lands, Box 2350 BZ, Hollywood 28, Calif.

FLORIDA. NEW Lake County development adjoining Ocala National Forest. Best fishing, hunting. Safe from bombs. Nice homesites $245 at $10 monthly. Folder free. Winston Vernor, DeLand, Fla.

WESTERN RANCH Land in Calif., Oregon & Washington. Virgin Timber. Your chance to become independent. Buy Now! From $10 to $25 per acre, full price, including 100% Oil & Mineral rights. Easy Terms. Send 10c (coin) for Full Details, Catalog, Photos. Pacific Lands, Box 2350 BZ, Hollywood 28, Calif.

JEWELRY

RHINESTONES, JEWELRY settings, cameos, sequins, beads. Send 10c for Illustrated Catalog. J. & M. Novelties, Dept. CD-5, Griffith, Ind.

GOLD PLATED Jewelry Supplies, Rhinestones. Moonstones, Pearls, catalogue 10c. Hobby Shop, 99 Prospect St., Paterson, N. J.

TREES, SHRUBS, FLOWERS

GINSENG, GOLDENSEAL. Hundred seeds $1.50; thousand $5.00. Dozen plants $1.50; hundred $9.00. Growing-selling instructions included. F. L. Collins, Viola, Iowa.

MINERALS—PRECIOUS STONES

MINERALOGY COURSE $5.00. Western School Of Mineralogy And Mining, Inc., Box 1130, Long Beach, Calif. Inquiries Appreciated.

PROSPECTOR'S HANDBOOK: Identify mineral ores quickly, positively. $1. Research, Box 1124-MI, Knoxville, Tenn.

EIGHT MOUNTED Specimens $1.00 Prepaid. Sixteen Larger $2.00. Dorman's, Rt. 1, Box 229½, Dinuba, Calif.

"GENUINE" RED Arizona Rubies (Garnets). Send quarter for packet. Bitner's, Box 1025A, Scottsdale, Ariz.

MISCELLANEOUS

OUTDOOR TOILETS, Cesspools, Septic Tanks cleaned, deodorized with amazing new product. Just mix dry powder with water; pour into toilet. Safe, no poisons. Save digging, pumping costs. Postcard brings free details. Burson Laboratories, Dept. E-52, Chicago 22, Ill.

HAND PROTECTOR and cleaner made at home from grocery store items. Keeps out dirt. Softens. For Mechanic, Painter, Officer worker, Housewife. Full directions and gallon size Han-Du Concentrate $1.00. Bon Art, Lake Orion, Mich.

LOCKSMITHING SECRETS! Opening, repairing, key-fitting, supply sources, etc., illustrated; $1.00. Gamblers' secrets exposed! 10,000 Formulas, trade secrets; 861 pages! Free details. National, 378 "M" Hooper Street, Brooklyn 11, N. Y.

AMAZINGLY DIFFERENT Razor—Makes shaving Fun! Gives incredibly clean, effortless shave. Nothing ever like it! Low introductory price now. Write: Kenmore Distributors, 3819(MI) Kenmore, Chicago 13.

INFORMATION ALMOST any matter or subject. We have the facilities and Know-How. Reasonable fee. What do you want to find out? Research, 1205 Spfld., Urbana, Ill.

300 BIG MAILS Guaranteed. Samples, offers, propositions, opportunities, 12 months listing, $1.00. Wright Publications, 2273 Hubbard, Memphis 8, Tenn.

LEARN BY Pictures: Quadratic Algebra, Better, Low Kind, Homemade Windmills, Chucks and Planers. Write: Ziembax, 6123 Orchard, Dearborn, Mich.

DETECTIVES OPPORTUNITIES. Experience unnecessary. Detective particulars free. Write. Wagoner, 125-J West 86th, New York 24.

FREE GOLD Panning Lesson, Catalogue, Mining Books, Supplies, Maps—"Where To Go"—Old Prospector, Bx 729D3, Lodi, Calif.

RECEIVE GIANT Mails. Magazines, Catalogs! Three months 25c, year 50c. Waddell's Directory, 341 East 76th, New York 21.

INCREDIBLE! BECOME a mental superman overnight! Floor everybody! Write: Bijou, Box 1727-LD, Hollywood 28, Calif.

REFRIGERATOR UNITS remanufactured and guaranteed, $36.00 up. Write Brighton, 3906 Joy, Detroit 6, Mich.

BURIED TREASURES & Lost Mines, send $1. for list of 125. Howard Jackson, 2659 N. Earle, Garvey, Calif.

MEXICAN LAW. General practice. Attorney, 1203 Arizona St., El Paso, Texas.

ARIZONA COLOR Cards, 12 assorted $1.00. Box 96, Superior, Ariz.

OLD GOLD WANTED

HIGHEST CASH Paid For Old, Broken Jewelry, Gold Teeth, Watches, Silverware, Diamonds, Spectacles, Platinum. Free Information. Satisfaction Guaranteed. Rose Smelting Company, 29-K East Madison, Chicago.

PERSONAL

"HOW CAN I Find Out?" You can! Information discreetly developed. Any matter, person, problem, anywhere. Worldwide. Officially licensed, bonded service. Established 1922. Reasonable. Confidential. William Herman, 170 Broadway, New York.

YOU CAN get 800,000 articles wholesale, direct from manufacturers. Big Discounts! You'll save money by buying direct. Send for your Free copy of, "Where To Buy It Wholesale." KeeKal, Dept. M-433, Kalamazoo 9, Mich.

PAPERHANGERS: MIX mannatex compound with paste, keeps wall paper from cracking, Information free, Guaranteed trial size $1.00. Write, Paperhangers Supply, P. O. Box 37E, Louisville 1, Ky.

I'M YOUR information guide about New York, vicinity. Mail forwarded. Legitimate services performed. Daniel Service, Box 901, Brooklyn 1, N. Y.

REMAIL—ANY City in the World, U. S. 25c. Foreign $1.00. Stamps free. International Hobby Exchange, 617 F. St. N.W., Washington, D. C.

MAKE MONEY addressing envelopes, mailing circulars. Complete instructions, 25c. Lederbrand, Cal Allen 2, Texas.

YOUR LEATHER Jacket Renovated expertly. Free circular. Berlew Mfg. Co., Dept. 13, Freeport, N. Y.

"INTERESTING MAILS"—25c keeps your mail box full three months. Bentz, Jr., Desk-E/68, Chatawa, Miss.

ALBANY, CAPITOL of New York State, Remail 25c. Benny, 183 Madison Ave., Albany, N. Y.

ALBUQUERQUE, NEW Mexico Remail 25c. Dobson, 416 West Taft, Albuquerque, N. M.

KANSAS CITY remail, 25c coin. Elmer Earnhart, Holt, Mo., RFD-1.

SITKA REMAIL 50c. America's last frontier. Box 545, Sitka, Alaska.

WANTED MISCELLANEOUS

WANTED: THREE-DIMENSION wooden puzzle of Empire State or Chrysler Building. Also name of manufacturer. Please write William Tirrell, Erwin, Wasey & Company, Graybar Building, New York 17, N. Y.

WATCHES, WATCHMAKING, CLOCKS, ETC.

"THE MODERN Clock." All about clock repair. 502 pages. 173 illustrations. $4.95, postpaid. 10-day return privilege. North American, Dept. 32D, 2018 North Avenue, Chicago 47, Ill.

WATCHMAKERS' JOURNAL contains instructive articles on watch repairing. $1.00 year. Sample copy 20c. Watchmakers' Journal, Box 3218, Daytona Beach, Fla.

10 HIGH-GRADE SWISS Ladies and Gents Wristwatches needing minor repairs, $18.00. Write for prices. B. Lowe, Holland Bldg., St. Louis 1, Mo.

WATCHMAKERS', HOBBYISTS' complete informative catalog 20c. Bengal Company, Culver City, Calif.

ARE CLEARED TO COME IN!

Special skills expertly maintain the global operations of our expanding United States Air Force. It is special skills of trained craftsmen, behind the flying skills, that keep our modern air power aloft to defend our nation.

Men with training as former specialists in any Service . . . or non-veterans with special technical talents . . . are needed *now* to support our ever-growing air might. Radio, radar and other communications specialists, weather, armament, automotive maintenance, medical technicians and many technical skills are urgently needed . . . now . . . today!

For your specialized "know-how," your Air Force offers greater opportunities for advancement, security and a rewarding sense of an important job well done.

Here, briefly is the story: If qualified, you can enter the Air Force in an attractive grade, according to your present ability. The Air Force will tell you exactly what your initial rank and pay grade will be before you join-up. Veterans, if qualified, enter in their old grade or better and will skip basic training and be assigned initially to a nearby Air Force Base.

For the rest of the story in detail, consult your local U. S. Army-U. S. Air Force Recruiting Station immediately, or *mail coupon today!*

MAIL COUPON TODAY *for Full Information*

AIRMAN PROCUREMENT
Headquarters, U. S. Air Force
Washington 25, D. C.

Please send me details about U. S. Air Force specialists.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

SPECIALTY _____

U.S. AIR FORCE

$7,000,000,000 for Door-to-Door Salesmen

By Harry Kursh

AMERICA'S fastest growing small-business opportunity is also America's most underestimated! Few people know that a group made up of two per cent of the American working population managed to make over $7 billion last year in door-to-door selling. This

Fuller brush dealers have found these simple rules effective: leave catalogs overnight, give free samples, be polite and keep it brief.

Golf instructor Tim Hartnett, right, began selling custom shirts ten years ago to fill in the lull in the golf season. Sales mounted so rapidly he became a full-time salesman. Mrs. Margaret Winchell, far right, became a direct saleswoman after 17 years as a housewife. Now she earns $125 a week selling cosmetics at specially set up parties.

fabulous figure was more than double the previous peak year. If you're not afraid to knock on doors, you can claim your share, too.

The door-to-door selling boom—for which an even bigger year is predicted in 1952—is opening the door for thousands to become independent, self-employed salesmen, selling practically anything a family can use. Already more than 3,000 firms have men and women going from door to door for them to sell everything from nylon stockings to fire extinguishers.

For example, when Al Gogolin came to Toledo, Ohio, in 1948 to establish his own business in repairs and installation of home heating equipment, he knew no more about that city than a visitor from Mars might know about

Brooklyn. He went ringing doorbells anyway, convinced the housewife would go for a good thing if it were brought directly to her attention. After his first full year, he chalked up more than $100,000 in gross sales. Today, the Gogolin Heating Co., ringing more doorbells than ever before, uses five top salesmen, five junior salesmen and a half dozen mechanics to keep up with its orders for repairing and installing heating equipment.

An even more spectacular story of door-to-door selling success is the case of Forest S. Barrett. In 1941, when direct salesmanship was still only a mild ripple in selling American products, he took a job with a Bible distribution firm. He went from door to door using this sales pitch: "Read the Bible to be wise. Believe it to be safe. And practice it to be holy."

In a few years, he became the firm's sales manager. Then he accepted a partnership in the company. By 1945, the company was changed to Barrett Distributors and moved to Dallas, Texas—Forest S. Barrett, president and sole owner. He is now backed by a force of 300 door-to-door salesmen and an office staff of 30 employes. His estimated sales for 1951 were close to $3,000,000.

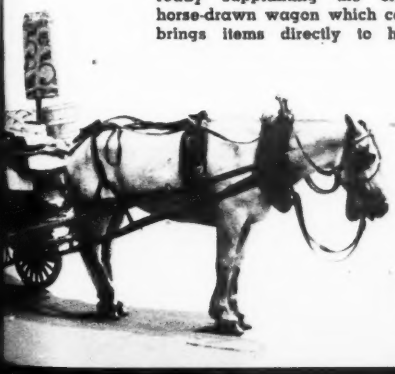
In fact, Barrett added a new twist to launching door-to-door salesmen on the road to self-employment. He used the chain-letter principle, calling it pyramiding partnership. He formed a partnership agreement with a salesman and left that salesman free to form a similar (or different) profit agreement with anyone else. Each succeeding salesman, thereafter, joined the previous salesman in a separate agreement of his own. Today, Barrett claims "anyone capable of following instructions, recruiting, hiring and managing other people" has unlimited opportunities with him.

Of course, there's nothing new under the sun and door-to-door selling is no exception. Experts trace it back to the first itinerant peddlers a couple of thousand years ago. However, as a big business, the history of door-to-door selling is comparatively recent. In 1852, C. W. Stuart and Co. of Newark, N. Y. started selling

These photos courtesy Opportunity Magazine

Frank Freeman, left, nets about $180 a week selling Fuller brushes door-to-door. He introduces himself to as many as fifty prospects every day. Lubrication specialist Kirk Jones, far left, sells oil and grease directly to farmers throughout the Midwest. He manages to earn more than $1,000 a month at it, too.

Modern store on wheels, right, is already supplanting the old-fashioned horse-drawn wagon which conveniently brings items directly to housewives.



One-time Fuller Brush employe Stanley Beveridge, left, started his own company which now grosses millions every year. His organization, Stanley Home Products, claims to have originated the party plan whereby a hostess invites a group of friends to her home to play games—and buy products.

trees and shrubs directly to the consumer instead of through the established channels. Then, in 1868 a man named J. R. Watkins bought a small bottle of liniment from a doctor who made his own preparation. Watkins soon found the liniment popular with his own friends. On an impulse, he decided it could be sold more widely if it were brought directly to the attention of the housewife. Introducing what was also probably the first free-trial offer, Watkins went around in an enclosed wagon, leaving a few bottles at each house. When he made a second call, those who liked the liniment paid; those who didn't, returned the unused portion.

Today, the J. R. Watkins Co. of Winona, Minn. sells hundreds of items and employs more than 15,000 door-to-door salesmen who ring up $45,000,000 worth of business annually. They serve some 20,000,000 customers.

But it took two brothers, Clarence E. Knapp and Elwin Knapp, right after World War I, to prove that you can sell almost anything by ringing doorbells. Looking

around for new business ideas, they chose the shoe industry. But their decision was revolutionary for they decided to sell directly to the customer with a product that businessmen swore couldn't be sold outside a retail store. They opened a small factory in Brockton, Mass. Then Clarence skooted out to Chicago to open an office, advertising for door-to-door salesmen. Hundreds flocked to his hotel room for interviews. Nearly all left just as fast as they came when they saw that it was shoes they would have to sell. One man stayed behind.

He was curious enough to ask: "How can you sell shoes without a store where you can invite a man to be properly fitted?"

"Come," said Clarence Knapp, "I'll show you." And he took him over to a group of newspaper truck drivers cluttered around the *Chicago Daily News* building waiting to haul away the latest edition.

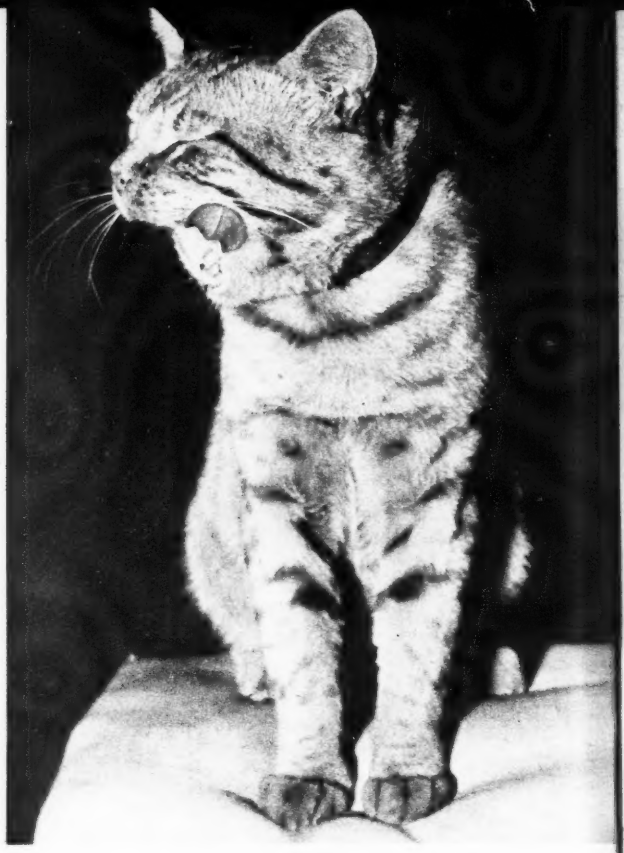
Within a couple of hours, Clarence sold 19 pairs of shoes from a suitcase. Today, the man who was with him supervises dozens of door-to-door salesmen from his slick Chicago office. And the name of Knapp Bros. Shoe Manufacturing Co. hangs over three factories producing men's shoes at capacity. Recently, Knapp Bros. door-to-door salesmen sold more shoes in one month than in any similar period in its entire history. And every pair is still sold without benefit of a store.

Nowadays, if you want to set yourself up as an independent door-to-door salesman, working as little or as long as you like each day, the list of things you can sign up to sell is practically endless—automatic floor waxers, pop-corn machines, brushes, vacuum cleaners, pots and pans, tools, gas and oil savers, fruit trees, machine tools, ball point pens, greeting cards, food products, insecticides, soap, razor blades, fire extinguishers, store signs, radios, typewriters and even television sets. In a tough, competitive market like New York, for [*Continued on page* 168]

One of the first modern direct sales organizations was C. W. Stuart & Co. which sells trees and shrubbery. Salesman—called landscape and fruit adviser—calls on prospective customer and obtains permission to make landscape sketch. Then, he returns in evening when husband is present. If homeowners are pleased with plan, they place order, shipped during the planting season.

Cookware salesman George Wolfer (holding platter) usually persuades a housewife to become hostess for a dinner party. He cooks a meal for the guests in his own pots and pans. After the pleasant dinner, he presents a short talk describing the advantages of his cookware and then accepts orders for it. Mr. Wolfer reports that sales often reach the $200 mark in one such evening.

All nine lives of Rhubarb, Paramount's feline movie star, were recently insured by Lloyd's. According to the policy, the cat must fly on scheduled airlines, stop at the best hotels and be accompanied by handler.



LLOYD'S OF LONDON WILL INSURE EVERYTHING

From CATS to

By Lester David

THE owner of a private zoo in England recently offered a huge cash reward to anyone who brought him the legendary Loch Ness monster, dead or alive. But he isn't worried about paying up if the elusive horror is ever hooked—he's insured.

Last year a golfer had to pay $37 for a round of drinks in the clubhouse after making a hole-in-one. But it actually didn't cost him a cent—he was insured.

Dozens of men in the U. S. who become the proud fathers of twins don't wring their hands at the prospect of the added expense—they're insured.

These strange policies were issued by under-

writers for Lloyd's of London, the fabulous, centuries-old British institution which will insure anything from cats to cataclysms, from actress' bosoms to the San Francisco Golden Gate Bridge (for a record-breaking $40,000,000). Lloyd's has issued policies on actors' beards, dancers' legs, models' backs, surgeons' hands and musicians' lips. It will protect you, for a premium, against almost any eventuality which might cause you to lose money—volcanoes, tidal waves, wars, foot-and-mouth disease, drought, snow, rain, insect plagues, sprinkler system leakage. You name it and they'll write you a policy at Lloyd's.

If you're rich and afraid kidnapers might snatch your child, Lloyd's will insure you for up to 90 per cent of any ransom money you might have to pay.

If you own a skiing resort and a mild winter keeps your slopes barren of snow, Lloyd's will make sure you don't lose money because of the adverse weather.

If you confidently expected your well-heeled maiden aunt to remember you generously in her will and you are struck suddenly by the horrible thought that she might marry and nudge you out of your inheritance, Lloyd's will insure you against that dire possibility.

If you own anything that floats, from an ocean liner to a skiff, Lloyd's will insure your vessel and its cargo.

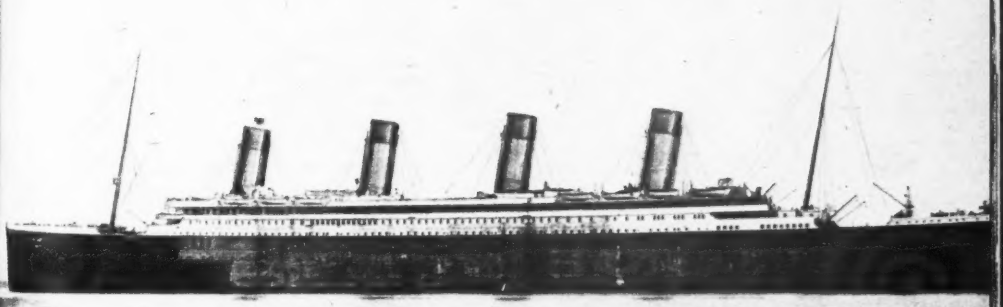
The amazing Lloyd's does business in the heart of old London in an imposing edifice, a far cry from the coffee house where it all started back in 1689. This is how it operates:

About 300 men sit in small, box-like stalls in a vast chamber which is called simply The Room. These are the underwriters, beside whom betting folk like Nick the Greek pale into insignificance. Their job is to calculate risks and issue policies—they are, in effect, making huge wagers that something will not happen. The underwriters represent brokers and syndicates who put up the cash and do business under the name of Lloyd's. Lloyd's itself doesn't write any insurance—that's done by the underwriters on behalf of some 2,000 individuals tied loosely together and trading under the world-famed name.

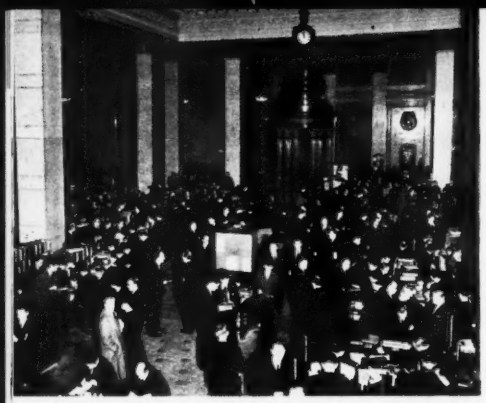
This is what happens when you want to take out an insurance policy at Lloyd's:

Let's say you are an inventor and you want to insure your hands. They are your livelihood—if anything happened to them, your income would halt. You get in touch with a Lloyd's correspondent—there are hundreds in American cities. He corresponds with one of the 2,000 Lloyd's brokers in London, who takes your request into The Room, joins the crowd around one of

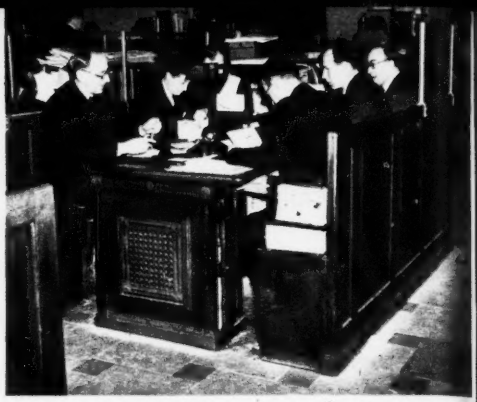
CATACLYSMS



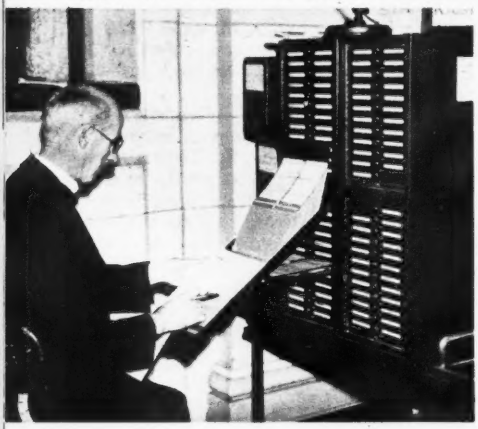
When the liner Titanic struck an iceberg and sank on her maiden voyage back in 1912, Lloyd's of London payed $4,000,000 to the owners who had cautiously insured the ill-fated vessel.



Underwriting Room at Lloyd's, above, looks just as busy as New York City's Stock Exchange. Amazing card index, below, gives details on practically every ship afloat in any part of the world.



Underwriting boxes, above, are similar to booths of the old coffee house where Lloyd's began. On the bulletin boards, below, are posted casualty lists from which members learn of losses at sea.



the underwriters, eventually gets his attention and presents your bid which he has written briefly on a sheet of stiff paper.

The underwriter must make a split-second decision—he has no time to weigh the matter thoroughly. He must be familiar with the hazards of inventors, as well as with the risk element involved in a dancer's legs, dust-bowl farming, salmon fishing or practically anything anywhere. If he decides to accept the risk, he writes on the slip the amount he is prepared to insure and initials it. Then the policy is made out in Lloyd's Policy Signing Room, where more

Slapstick screen comedian Ben Turpin insured his cross-eyes against turning straight for $80,000. Showgirl Evelyn West, worried about what time would do to her lovely figure, decided to insure her bosom for $50,000.

Famous Lutina bell, salvaged from the wreck of the frigate Lutina which was insured for $6,000,000, rings out the maritime news to Lloyd's underwriters—once for bad tidings, twice for good. Ringer is known officially as the Caller.

than 100 girls turn them out at the rate of hundreds every hour.

The one point which governs the thinking of the underwriters is this: does the applicant have an insurable interest? That is, does he stand to lose something? Will his livelihood be affected if something happens?

Not long ago, for example, Lloyd's underwriters saw a definite insurable interest in a hole-in-one on the golf course. By custom, in this country and England, anyone who performs golfing's rarest feat must stand for a round of drinks in the clubhouse for all who happen to be on the premises. In England, the tradition calls for double [*Continued on page* 98]

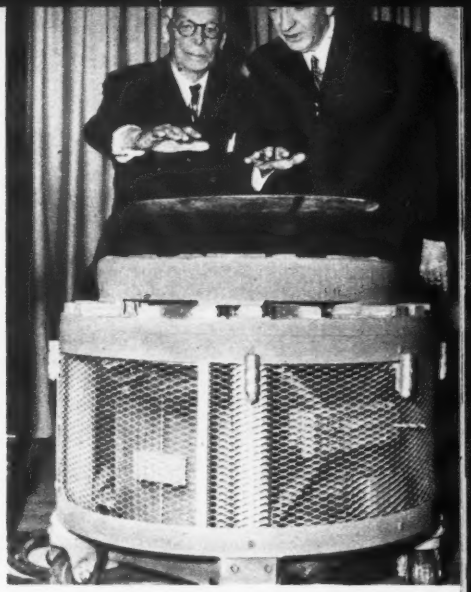
Legs of movie stars are often insured by Lloyd's of London. Here, the queen of gams, Marlene Dietrich, displays the shapely legs which she has insured for $500,000. Dancer Fred Astaire once insured his for $800,000.

Heat-Proof House in Huntington, L. I. is also termite-proof and has decay-proof walls. Lake on roof, inset, operates as cooling system. Windows work electrically, disappear to be replaced by screens.

NEW in SCIENCE

Tiny Mike shown below is being used in movie sequences where microphones are difficult to conceal. Jan Sterling illustrates how easy it is to hide this small battery case and four-foot antenna under her clothing.

Around-Corner Barrel is sub-machine type and shoots at 90°. It fits the Army's M-3 and fires .45-caliber bullets at the rate of 450 per minute. It is now being used by U. S. tank crews and infantrymen.



Ninety-Second Cake was baked recently by electronics in the DeForest Laboratories in Chicago where radio and television technicians are trained. Here all the latest miracles of science are taught.

Floating Tray above is not a magic trick. It is an electromagnet known as a levitator which sets up alternating magnetic fields suspending tray in air. Exhibited at Museum of Science and Industry.

Non-Sinkable Steel Boat can be flooded with water and still run under its own power. The buoyancy to offset the weight of thousands of gallons is provided by tanks. Welin, Perth Amboy, New Jersey.

Railless Subway Car running on rubber tires along 15-inch wooden treads is product of Paris. It took four years of experimentation to produce and delighted French officials in a recent demonstration.

Tiny but deadly insect-like tri-tracks would spearhead our advancing infantry.

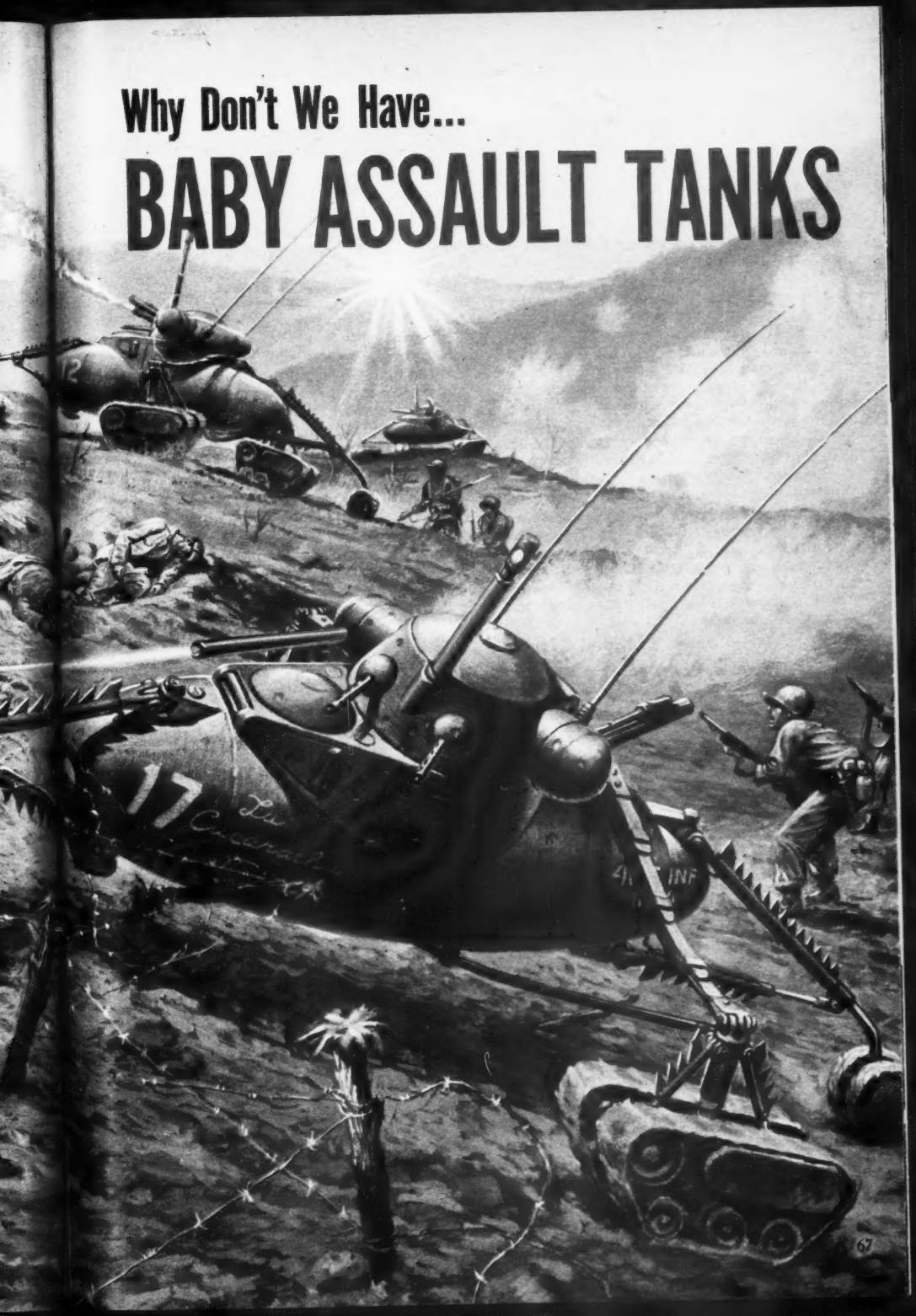
By Frank Tinsley

WE are living in a machine age and our wars have become mechanical, but it's still the muddy, tired infantryman who must storm the enemy's stronghold in bloody assault.

In some cases the tactical situation and nature of the terrain make this necessary. In many others, however, the brunt of the attack could just as

Why Don't We Have...

BABY ASSAULT TANKS



well be absorbed by light, heavily armed machines. Why, then, can't we send in a first wave of baby assault tanks and use our irreplaceable GI's for the less hazardous chore of mopping up?

The primary consideration for such a tank is mobility. Our baby battle-buggy must be able to scuttle rapidly over rough ground, scale steep banks and bridge shellholes and trenches.

In the design shown here the armored hull is supported by three independently sprung track gears which are joined to the body by long, self leveling legs. In order to span wide gullies the front leg telescopes and is capable of feeling around for a foothold like an insect's antenna. It can be raised, or lowered and swung in a 180° arc. It also can be extended and steered. While all these movements are taking place, a jack is necessary to give temporary support to the apex of the triangle. This can be of the hydraulic type, retractable and operated from within the hull.

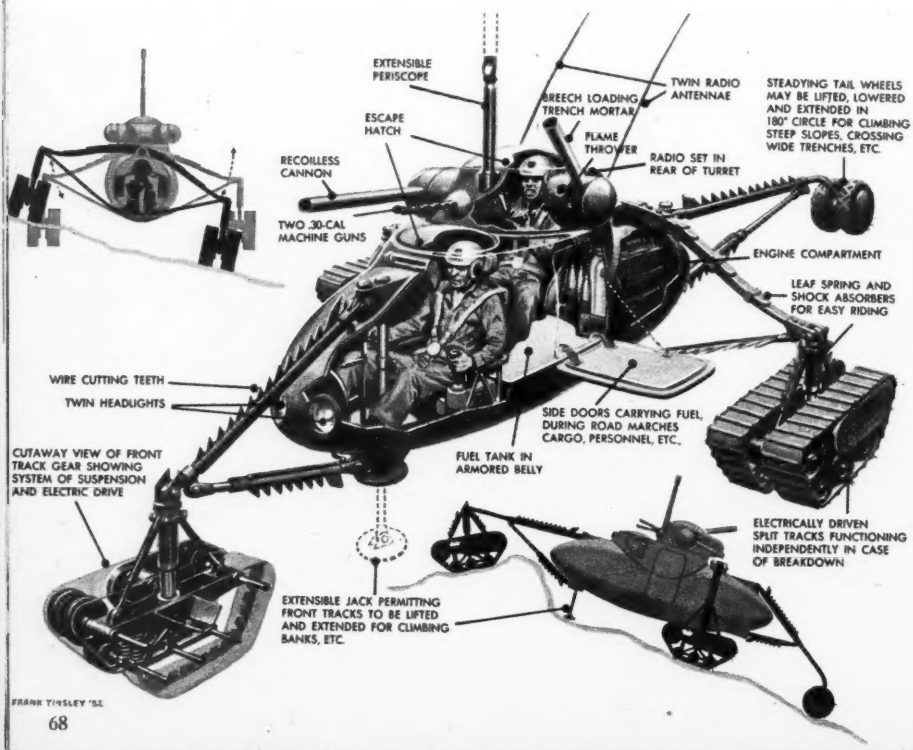
Some sort of rear buttress is needed to prevent our buggy from tumbling over backwards while scaling extra steep slopes and banks. Again we borrow from the insect world. A universally mounted tail "feeler," similar to the front rig, does the trick. Extended and lowered on uphill grades, it props up our buggy like the tucked-down tail of an insect on a twig.

The hull is cigar-shaped, 12 feet long, swelling to a 3½-foot maximum diameter. It is capped by a revolving turret in which the armament is mounted. This raises its overall height to 7 feet, a minimum for clear vision in high grass or bushy terrain. The width of the main tracks is 12 feet and the machine's overall length can be extended from 24 to 32 feet.

The two-man crew consists of a driver and gunner. The former sits in a bucket seat in the nose and drives by means of two miniature control sticks—one for the main tractors, the other for the nose unit. Other controls, like those found in the cab of an electric power shovel, permit him to manipulate the telescopic nose and tail gear.

The gunner sits behind and above the driver in a hanging seat that revolves with the turret. The latter is mounted on a circular track with a full 360° traverse and is fitted with ear-like extensions on either side. These are really smaller turrets which revolve in a vertical plane to elevate or depress the guns mounted in them. •

Detailed Cutaway Drawing of Tank

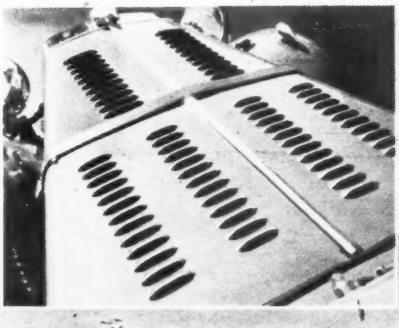


jeep-going fishermen

TWO comfort-loving anglers have rigged up the most fantastically mechanized fishing contraption ever seen on Minnesota's sky-blue waters. It's a modified amphibious jeep, robot controlled.

Bill Hibbard, an aeronautical research technician for Minneapolis-Honeywell Regulator Company, and Charles Melony, a local hotel manager, like lots of comfort when they fish so they bought a jeep from war surplus and installed in it a bomber's automatic pilot. While trolling they put the jeep in low gear, dangle their lines in the water and relax—until a fish bites. •

TOPNOTCHED MG



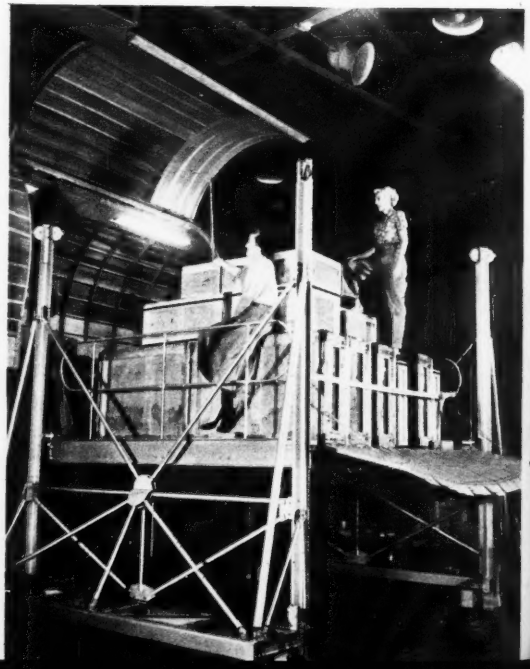
A midget with real class is this MG-TD which won the title, Most Outstanding, in Calif. Owner is Henry Blanke, a prominent Hollywood producer. Color is gray with red fender wells and upholstery. Borrani wire wheels have aluminum brake fins. A Runyan hard top, leather quilted inside, is removable. The hood is equipped with special cooling vents. •

Foam-Fog Firefighter

THE new Air Force crash truck makes older models look like horse-drawn carts in a jet age. It has a 310-horsepower engine, balloon tires, a two-way radio and an Arctic heating unit that could heat a five-room house. Nozzles above cab deliver 400 gallons of water per minute. These and four nozzles beneath chassis deliver foam or fog. •

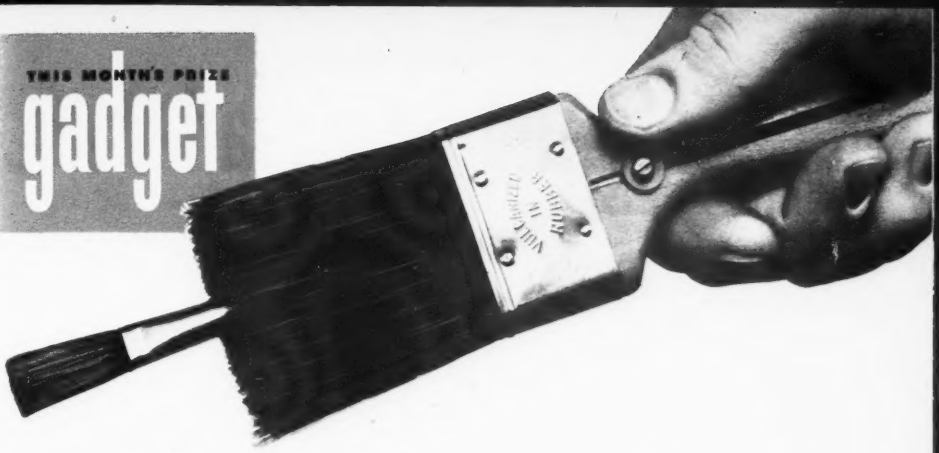
Loading Aids for Aircraft

LOCKHEED'S electric conveyor, below, driven by a subfloor chain can move cargo in any direction by means of a portable "pogostick" pulley. Box is being pulled to center and then will be drawn to plane's door. Portable elevator, right, can lift 10,000 pounds 12 feet, is powered by electricity. Unit can be disassembled and stored in the plane. Wheels on its base permit easy moving. •



THIS MONTH'S PRIZE

gadget



Kangaroo Paint Brush

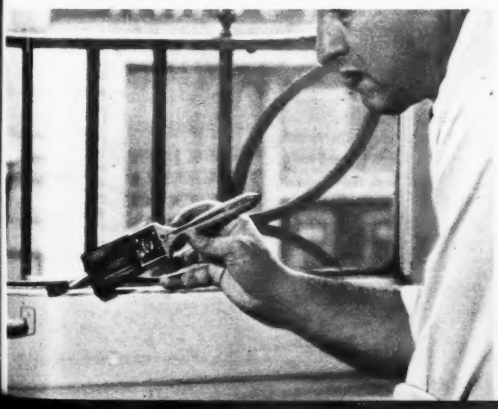
WIN $50

Dreamed up a neat gadget? If you're pretty keen about that pet project of yours, get busy and work it out in your shop. Then send pictures and a description of your invention to the Gadget Editor, Mechanix Illustrated, 67 West 44th Street, New York 36, N. Y. Each month the best entry will be given a cash prize of $50.

HERB KRAVITT of Philadelphia, Pa. was a magician by trade and a workshopper by hobby. He was a good painter, too, but no amount of conjuring could solve the problem of painting small areas with a big brush—like that time he had to redo the kitchen windows. Kravitt was adept at pulling rabbits out of a hat but this trick had him stumped. One day the solution occurred to him. If he could pull a rabbit out of a hat why couldn't he pull a little brush out of a big brush? The result was this item which has won MI's Prize Gadget Award of $50.

Kravitt calls his brainchild the Kangaroo Brush. It consists of a large two-inch brush with a smaller one hidden inside which can be ejected by sliding a button on the handle. When used for ordinary painting, the smaller brush can be locked within the larger, filled with paint and ready for action at a moment's notice. A special neoprene bushing prevents paint from leaking into the handle and interfering with its action. •

Mr. Kravitt illustrates how the Kangaroo works when painting the narrow edge of a window frame.



By pushing the button on the brush handle, the small brush, filled with paint, is ready for use.

MI Tests the Overhead-Valve

"The greatest Ford since the Model A" says Tom after testing the '52 Six which, with a dynamite-loaded new engine, can out-perform the famous Ford V8.

By Tom McCahill

FORD pulled the string on the competition with the introduction of their 1952 overhead-valve six. This new Ford Six will out-jump and out-run anything in its price class like a greyhound breezing by a Mexican Chihuahua.

As if hot performance wasn't enough to assure the newcomer success, these new cars are in my book the best looking Fords ever built. I think your old Uncle Sam can take a deep bow for the looks change because the current models have had their former soda fountain display of bright work cut to the bone, making them look more like class automobiles instead of bawdy Christmas tree ornaments. The front grille has a modest display of chrome and some of the same stuff is sparingly used in the tail lights, bumpers and hubs. But aside from these few spots the new Fords are as nude of chrome as a new-born skunk.

The Dearborn boys, however, have jammed more

FORD SIX

Less metal trim and cleaner lines contribute toward the "best looking Fords ever built" according to Tom, snapped above as he took a Six around the Ford test track.

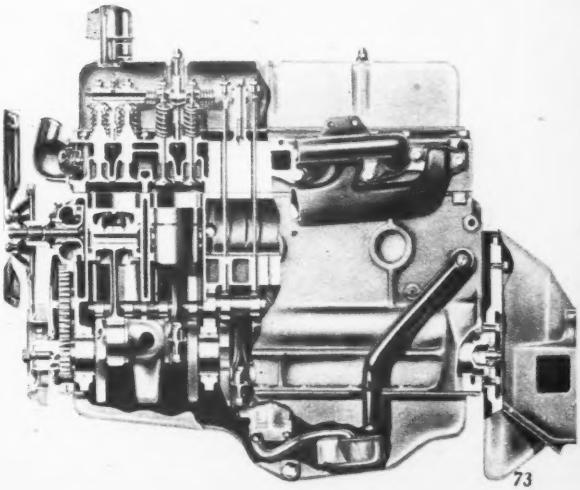
glass into this rig than Carrie Nation ever smashed on her best saloon busting day. For those who like the greenhouse motif, this is swell. Personally, I think the glassworks craze is often overdone. Though visability is better, in summer under a broiling sun, especially in the southwest desert country, the driver sometimes gets so hot he doesn't give a damn if he runs head-on into a full-blown bull moose.

The big wind, however, is not that these new Henrys have less chrome, more glass and some brand new bulges—it's the new power plant. Before the Korean deal got to look like a real war, Ford had planned an entirely new engine splurge, all the way from the Ford Six to the big Lincoln. The famous V8 Ford was to be an overhead-valve job and so was the Mercury's power plant. But these two cars got caught in the middle by some weird retooling restrictions so that, out of the entire line, only the Ford Six and Lincoln squeezed through with new engines.

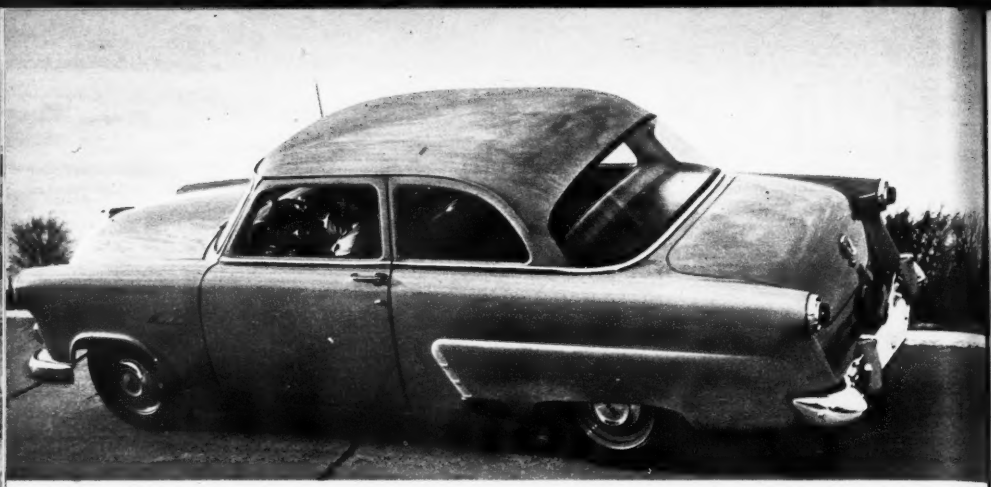
The Ford V8 and Mercury engines will remain pretty much as they have been for years except for a factory hopping up of both squirrel cages. Both these old V8 flat tops have had a compression raise from 6.8 to 7.2 to 1. A few other minor hot rod changes have raised the torque of the Ford V8 to 196 from 180 and the horsepower from its old rated 100 up to 110.

Now, all this sounds fine except for one thing: the new upstart Ford Six will beat the pants off the 1952 V8! When Ford first brought out its flat top six a few years ago, I was told this was to be a little brother companion piece for the big V8. I sincerely believe that's what it was meant to be. But someone slipped baby brother a hypo of muscle juice and produced what is now, to my way of thinking, the greatest Ford built since they junked the Model A.

There is only one thing that will make old Ford fans wince a bit on opening the hood and that's the



At right is a cutaway drawing of the brand-new overhead-valve mill which Ford engineers have worked over for the past few years.

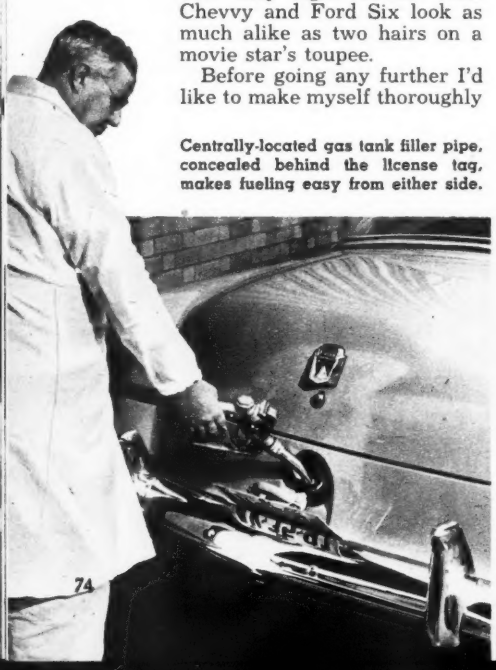


One-piece glass windshields, front and rear, are new features of the '52 line. This Mainline 2-door Six was clocked at 93-94 mph.

looks of the engine. From almost any angle this mill resembles an overgrown (excuse the expression, Ford men) Chevrolet. For years, in the country's gamier saloons and gin mills, Ford and Chevvy fans have made the night hideous with spirited renditions of the "Who's screwy? You're screwy!" game, featuring such silly remarks as "A V8 engine wears its cylinders egg-shaped" or "Overhead valves make more noise than a Trumanite caught with his hand in Fort Knox by Senator McCarthy." Now what will they fight about? The Chevvy and Ford Six look as much alike as two hairs on a movie star's toupee.

Before going any further I'd like to make myself thoroughly unpopular in certain circles by uncorking something that I think has needed uncorking for a long time. In the course of a year I get quite a few letters saying, in effect, "I can't afford a real good car like a Caddie, Lincoln or Chrysler but in the low-priced field what do you think?" I think the guys who write those letters are nuts! All things being equal, a Caddie won't go one mile further or last two days longer than a Ford or Plymouth, for example. The expensive car's fuel pumps, rings, points, brakes and plugs will wear out just as fast and so will every other part including the body.

Why have expensive cars then, you ask? Well, the real reason is becoming harder to justify every year. In the old days this



Centrally-located gas tank filler pipe, concealed behind the license tag, makes fueling easy from either side.

New Ford's rear luggage compartment lid has its hinges mounted on the side, counterbalanced to help raise lid and hold it open during loading.

A newcomer in the 1952 line is the six-passenger, all-metal Ranch Wagon, available with Six or V8.

more-expensive-means-better-car axiom was true—but no longer. Here's what the big cars do have: number one snob appeal because of richer looks. After this in rather weak succession come better ride, more power and usually better performance. From there on in you are forced to lie like a ward-heeler the day before election to think up any other legitimate reasons.

The big cars are not one bit safer and they are usually a lot harder to handle. Most guys who buy big loads and can't afford them justify it by claiming, "An expensive car is a good investment. It will last longer, cause far less trouble to keep going and will be much safer." Hooey! Let's face it (and I own a big car)—we like the better performance and few other features

SPECIFICATIONS

MODEL TESTED:

1952 Ford Mainline 2-door sedan (with synchromesh and with Ford-o-matic transmission)

ENGINE:

6 cylinder, OHV; bore 3.56 inches, stroke 3.6 inches; maximum torque 185 foot pounds @ 1700 rpm; brake horsepower 101 @ 3500 rpm; compression ratio 7.2 to 1

DIMENSIONS:

Wheelbase 115 inches; overall length 197.8 inches; tread 58 inches front, 56 rear; width 74 inches; height 63 inches; weight 3,168 pounds; standard tire size 6.00x16; gas tank 17 gals

PERFORMANCE:

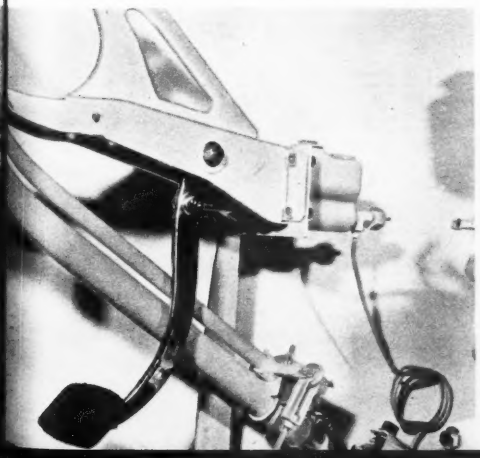
	(synchromesh)	(Ford-o-matic, using L. & D.)
0 to 30 mph,	4.3 seconds	4.8 seconds
0 to 50 mph,	9.2 seconds	11.9 seconds
0 to 60 mph,	12.3 seconds	16.1 seconds
0 to 70 mph,	18.0 seconds	25.4 seconds

Half-mile from standing start, 32.0 seconds (synchromesh), 35.4 seconds (Ford-o-matic)
Top speed, 93-94 mph (synchromesh), 88-89 (Ford-o-matic)

SPEEDOMETER ERROR:

At 60 mph on speedometer, actual speed 56.07 mph (synchromesh), 55.04 (Ford-o-matic)

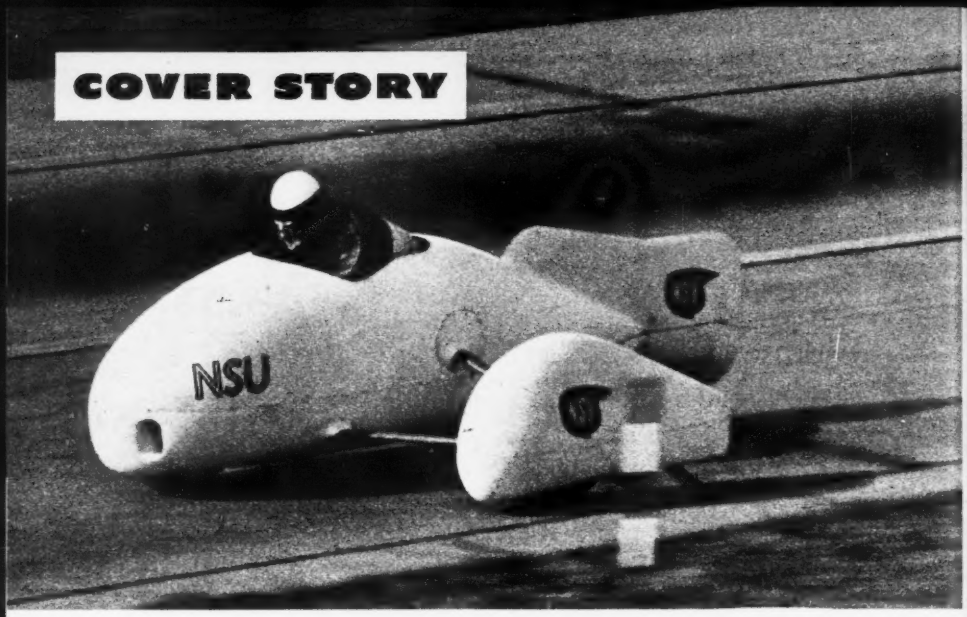
Suspended brake pedal, designed to give easier, more positive braking, is another new feature. Clutch pedal (not shown) is also suspended.



but that pride of ownership—the snob appeal—is the big reason, nothing else. Today, unlike 20 years ago, the top-selling big three will wear as well as the most expensive cars and give just as good service.

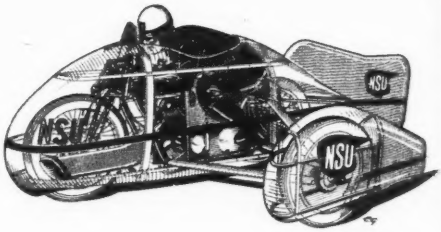
I no longer own a Ford but I have been a Ford fan for years. Fords are great automobiles in any league and this new tomato is tops. I test drove this wonder boy on the Ford track which offers ample variety of road surface, hills, bumps and the works. If any of the big car owners think they can give this wildcat a tossing around in getting away from a [*Continued on page* 166]

COVER STORY

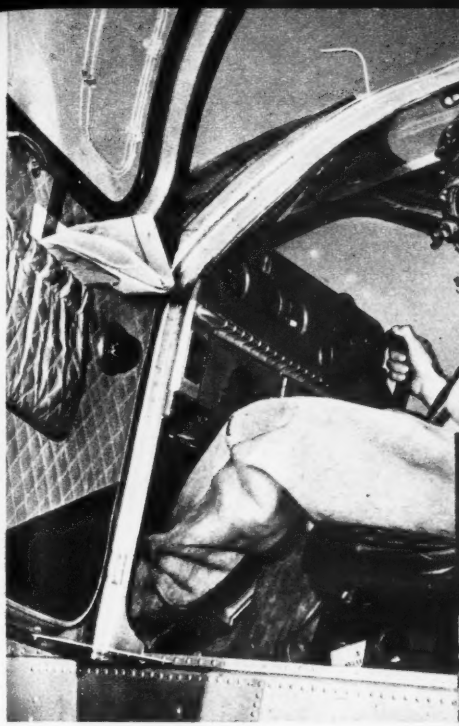


FASTEST SIDE CAR

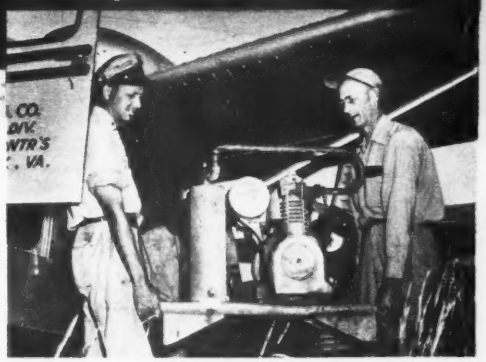
SPEEDIEST man on three wheels is Herman Boehm, a German racer who smashed the world record for side car motorcycles recently with a speed of 154 mph. Previous high was 137 mph. Boehm drove a German NSU 500-cc motorcycle with a four-cycle, 110-hp motor with compressor. In order to reduce wind resistance, both the motorcycle and the side car were covered with a light aluminum shell. To simulate weight of passenger, side car wheel carried 132 pounds of lead plate. •



Champ Herman Boehm waits for his streamlined cycle to be warmed up, below, before making the recordbreaking 154-mph run, top of page.



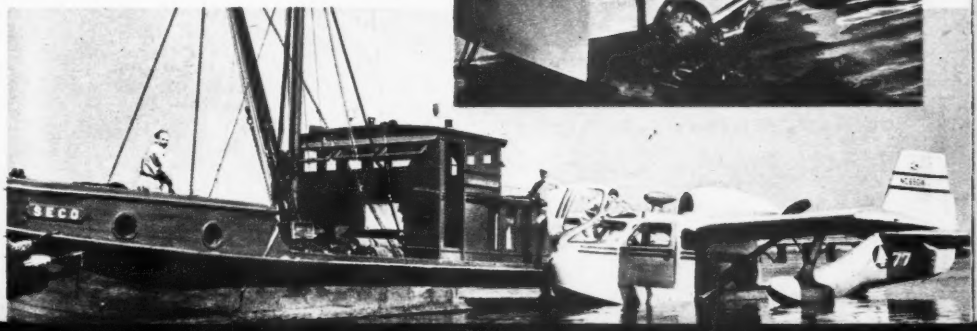
Fly Diver



Cap'n Barnes poses for a photo in his Seabee airplane which flies him to work. At right, the compressor is loaded into the back seat.

CAPTAIN L. H. Barnes, a deep sea diver with a yen for the wild blue yonder, uses an airplane for his work in submarine salvage. He operates the Submarine Engineering Company of Norfolk, Virginia, and on a moment's notice this flying mariner will throw his diving suit and helmet in his plane and take off to answer an emergency call from a foundered ship. Captain Barnes has found that speed in this world is essential. He can be landing beside the distressed vessel at the same time another diver would be starting his boat. •

Barnes goes over and down, right, while his helper handles the air line. He also owns the 50-foot tender, below, but prefers his plane.



A MONEY-MAKING

idea

Their Potatoes

Don't say doughnuts to the Pelton brothers, say Spudnuts. They glamorized the lowly spud and made themselves a fortune in the process.

Make Dough

By H. W. Kellick

AL and Bob Pelton were suckers for sinkers—doughnuts, that is. They'd eaten glazed doughnuts, chocolate covered doughnuts and just plain doughnuts. They were also eager to make lots of money and doughnuts got them to thinking.

"Why can't we invent a new kind of doughnut?" Al said one day over a cup of coffee and a doughnut. Just like that.

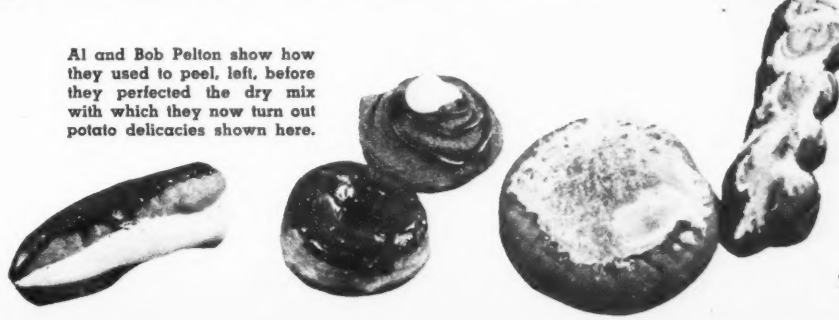
Today, the brothers Pelton never mention the word doughnut. Say Spudnut and you'll draw a smile from them, though. For they're out to supplant the common doughnut with their million-dollar idea—a delicious potato pastry.

As a matter of fact, the Peltons are now selling more than three-quarters of a million dozen Spudnuts per month. To date they've franchised 350 shops throughout the United States, Canada, Alaska and Hawaii.

When the brothers hit on the Spudnut idea, they spent endless hours planning on how to get started. If they could introduce their product they felt that they could certainly earn more money than they were getting at their respective jobs as electrical-appliance salesman and drugstore clerk.

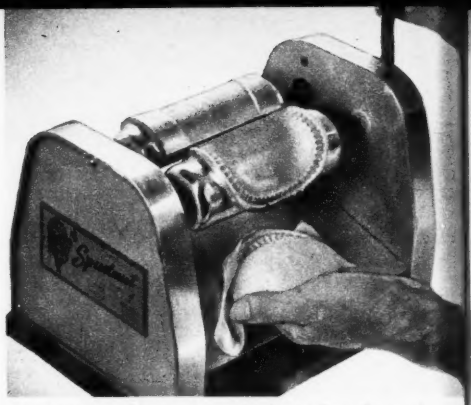
Between them they had $75 in cash. That was enough to rent a tiny store. There, they started to work out their formula—dough tastefully flavored with potato water. The idea failed. They thought for awhile that they were washed up and their big dream shattered.

Undaunted, they continued to experiment. This time they tried mashed-potato doughnuts. After making a batch, they passed out a few samples among friends. The golden brown potato doughnuts looked attractive and the folks liked the taste of this product. Even the smell was wonderful. Everyone who sampled the doughnuts liked them.



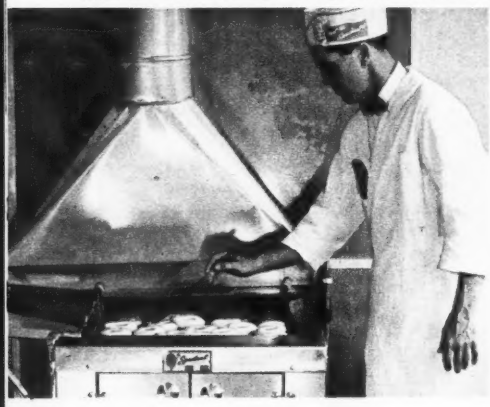
Al and Bob Pelton show how they used to peel, left, before they perfected the dry mix with which they now turn out potato delicacies shown here.

Expert chefs cut the light potato dough carefully and then flip the Spudnuts over their thumbs.

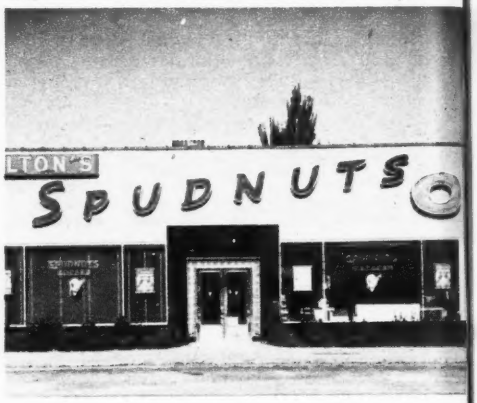


Spudover machine cuts and crimps the edges of the newest Pelton turnover type of confection.

White-uniformed kitchen workers deep-cook the Spudnuts in shortening to a golden-brown color.



General offices of the Spudnut Corp. in Salt Lake City house model shop which tests new items.



Satisfied with their invention, the Peltons held a minor celebration. They staged a little party and in an informal ceremony they christened their product Spudnut.

Handicapped by lack of money, the boys at first worked without modern equipment. Like Army KP's they peeled and mashed thousands of potatoes by hand until they saw potatoes in their sleep.

Slowly, they introduced their brainchild to the local public. The customers gobbled them up and came back for repeat orders. Soon the brothers had saved enough to buy an automatic peeler and masher.

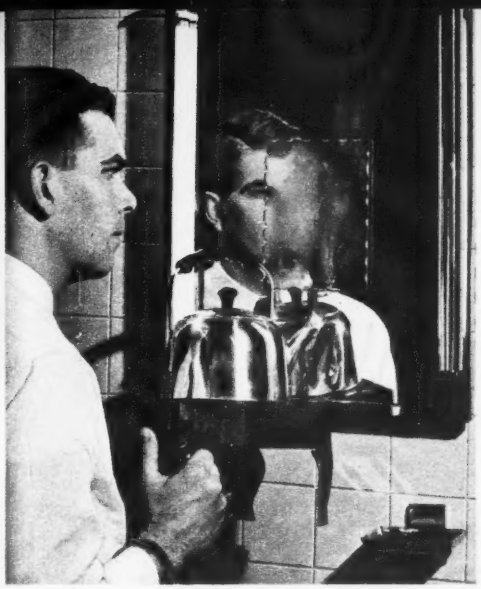
Experimenting further, the boys tried out many new methods to ease their labors. Finally, they hit on a dry potato mix that eliminated all their major troubles. There were no more tough sessions peeling and mashing potatoes.

Shortly after the Peltons got started they received many requests from local dealers who desired to handle the Spudnut product. At first, the Peltons rebelled. They wanted to hog the idea for themselves. Then the boys got to thinking. If a whole lot of dealers handled Spudnuts, they reasoned, we might get into the franchise business and thus spread our Spudnuts all over the world.

Within a few months, the Peltons entered the franchise business. The idea grew so rapidly that soon it was necessary to set up a special Franchise Department. Salt Lake City became the home base where a complete mix plant and warehouse is in operation.

Shipping to distant points became an important part of the new, growing enterprise. So the Peltons looked around for a suitable distribution area. After considering many cities, they settled on Cleveland, Ohio, to act as a pivot in handling distribution throughout the east.

Now they're planning to build prefabricated stores which can be put up in a jiffy. The Peltons expect to be roaring into action with their ready-made stores soon. Anyone with as [*Continued on page* 166]



Fogless Mirror solves a bathroom problem. An electric heating element made with Du Pont neoprene keeps glass warm, prevents condensation. Center is common mirror. Parker Co., Meriden, Conn.

Blenda-Mix when attached to any electric mixer blends drinks, purees fruits and vegetables and even chops onions without crying. Prepares baby food and garnishes. Damar Distributing, Newark, N. J.

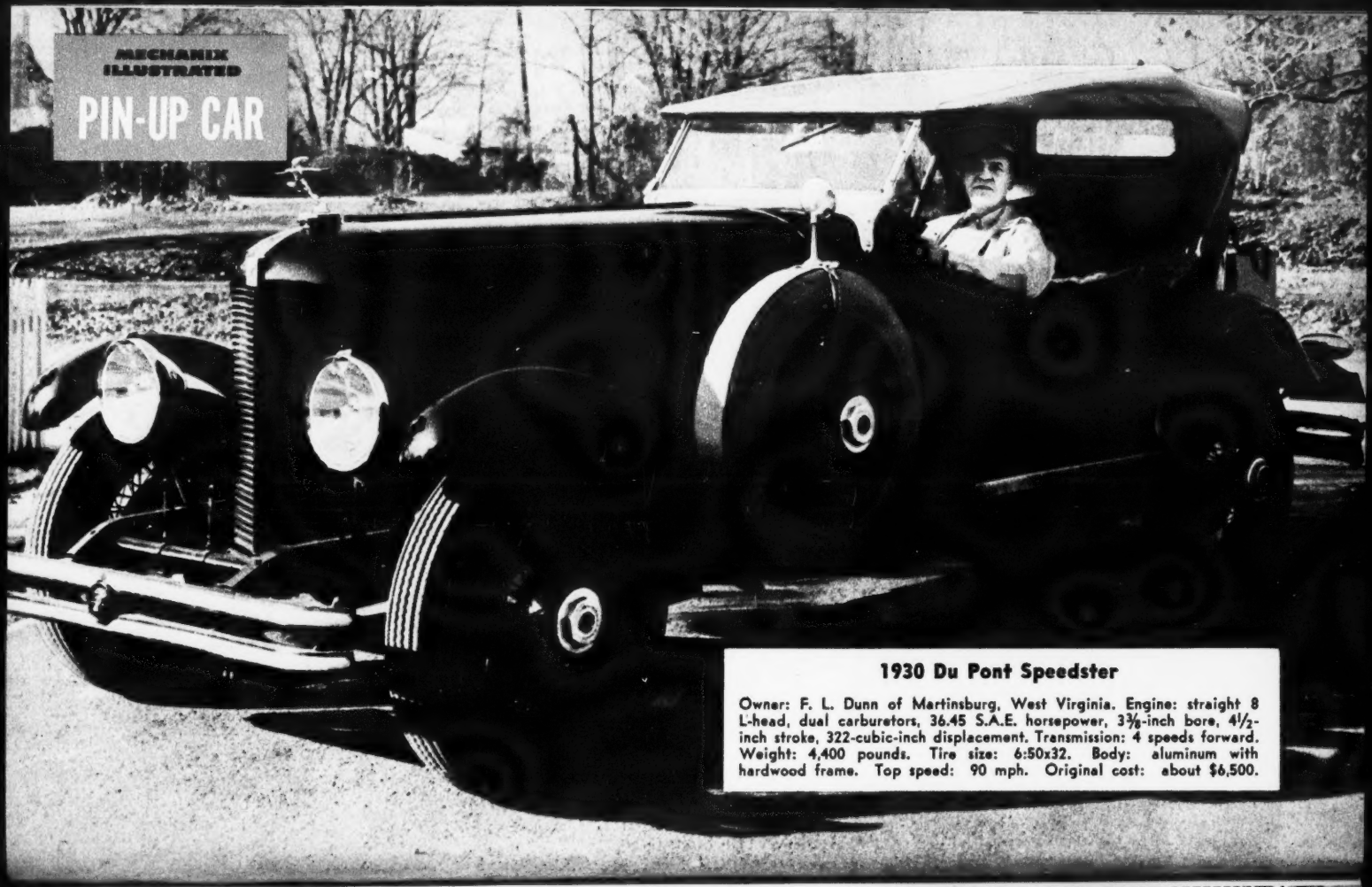
NEW for the HOME

Skotch Kooler keeps contents hot or cold as desired. On picnics it doubles as a watertight ice bucket and it's an airtight container for catch when you're fishing. Hamilton Metal Prod. Co., Hamilton, Ohio.

Garbage Cover Clamp clips to the can and holds the lid in place. It's dog and cat-proof, yet the lid can be lifted easily. It fits almost any standard can holding over 15 gallons. Emerson Mook, Inc., Dayton, Ohio.

MECHANIX ILLUSTRATED

PIN-UP CAR



1930 Du Pont Speedster

Owner: F. L. Dunn of Martinsburg, West Virginia. Engine: straight 8 L-head, dual carburetors, 36.45 S.A.E. horsepower, 3⅜-inch bore, 4½-inch stroke, 322-cubic-inch displacement. Transmission: 4 speeds forward. Weight: 4,400 pounds. Tire size: 6:50x32. Body: aluminum with hardwood frame. Top speed: 90 mph. Original cost: about $6,500.

Inner-Spring Tire is really flat-proof according to its inventor Antonia Pieroni of Italy. To a central ring curved around the car's wheel is attached a series of intertwined steel springs. The unit fits any tire.

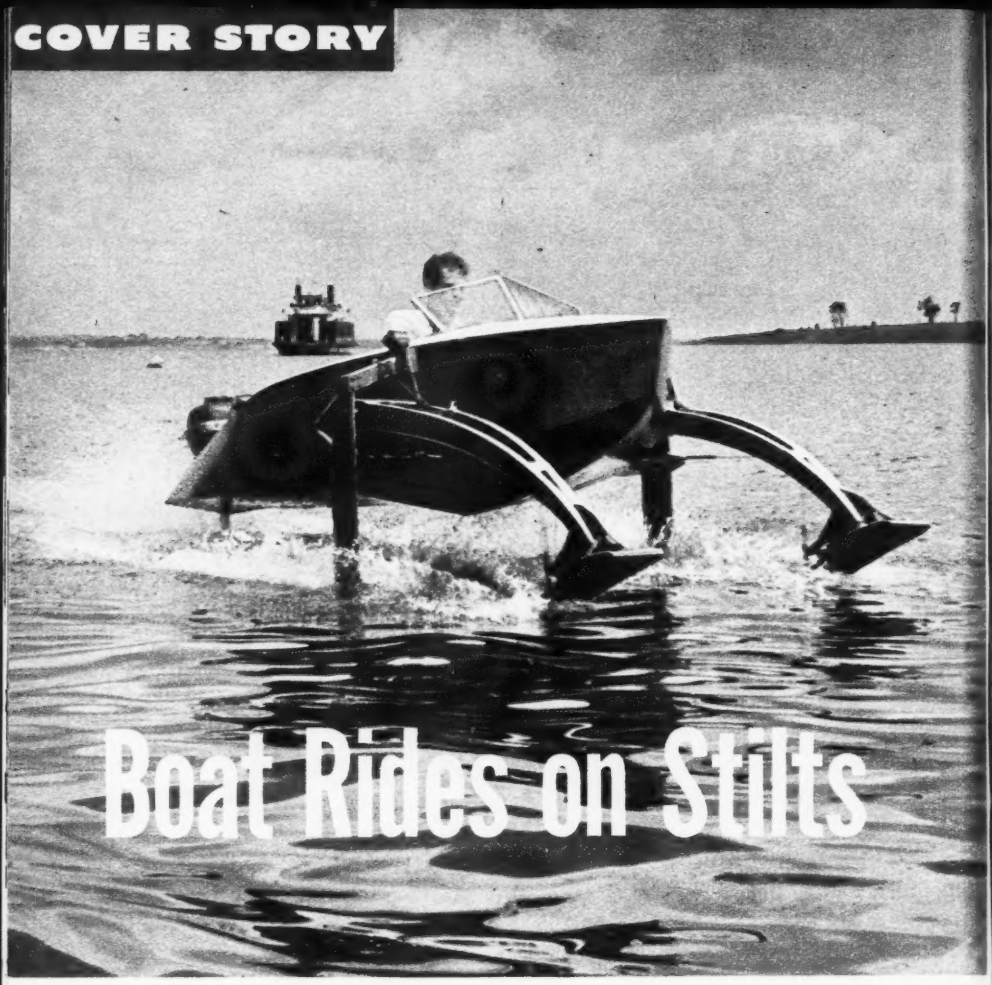
WIN $25

Send in a sharp, glossy photo of a snazzy car, old-timer or new, posed as at left with owner or a pretty gal. Include self-addressed, stamped envelope (just in case) and all vital statistics about car and owner. Mail to Pin-Up Editor, MECHANIX ILLUSTRATED, 67 West 44 St., N. Y. 36, N. Y.

NEW for the ROAD

Safe-T-Table designed by Detroit auto stylist John Chika makes the seat next to the driver the safest in the car. A protective table extends to fit against the passenger's chest, folds against dash when not in use.

COVER STORY



Boat Rides on Stilts

BACK in 1942, when Hitler was threatening a blockade of Britain, scientists frantically searched for a solution to the torpedo menace. One obvious answer kept recurring: lift the hull of the ship out of the water. But how?

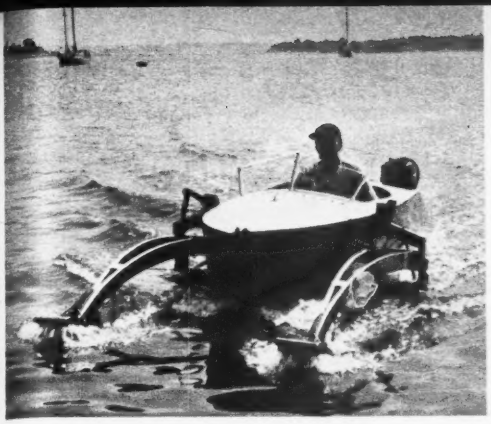
Out of this desperate situation, the idea for the Hydrofin developed. And now, just about ten years later, it looks as if the crisis-born craft is coming into its own.

Just how do they work? The basic elements are a fuselage (completely out of water while the boat is in motion), 3 fins or hydrofoils (under the surface) which are connected to the fuselage by supporting struts or hydropeds, and of course, a power plant. Then, there are two forward projecting stilts, called jockeys, which predict the water surface in front of the foils.

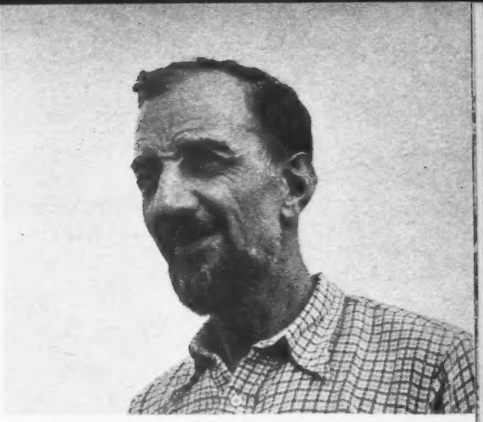
When the hull is lifted two feet over the water, small waves can be crossed without even a bump at any speed—the chop being absorbed in the clear space between keel and water surface. The effect in rough water is one of riding in an automobile with good springs and shock absorbers.

Standard production Hydrofin models are 12½, 18½ and 24½ feet long, carrying 2, 5 and 10 people. Plans are now afoot, though, for commuter models, 30 feet long and capable of carrying 17 people.

The manufacturers—Atlantic Hydrofin Corporation of Miami, Fla.—claim that when the American public becomes completely aware of Hydrofins, these crafts will become the major means of short-distance water transportation. Once you get a taste of flying on water, they say, you will find airplanes and speedboats old-fashioned. •

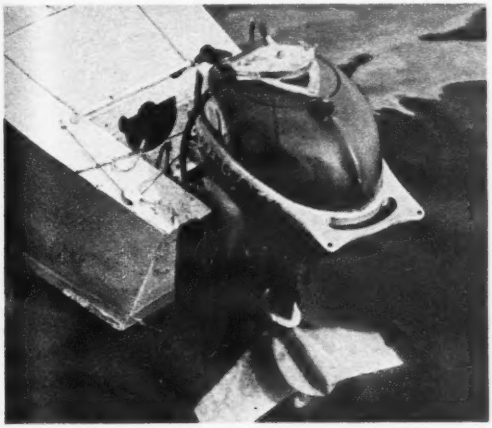


Taxiing Hydrofin, above, performs like regular craft; hull lifts from water when planing, left.

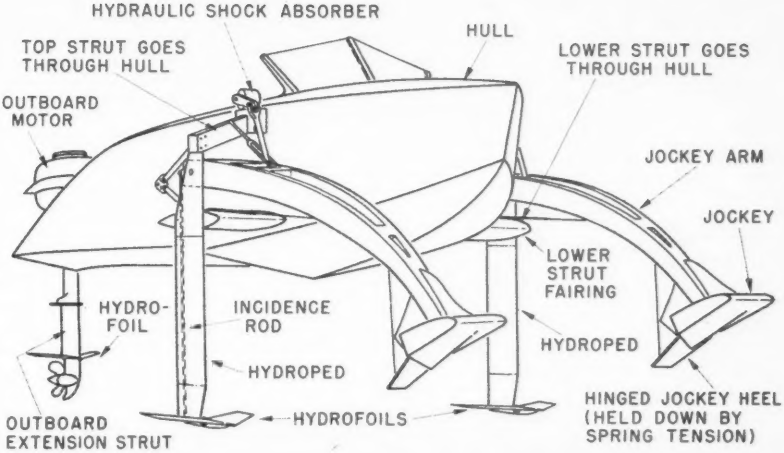


Major developer of the Hydrofin is Christopher Hook, an internationally known British engineer.

Newest model Hydrofin uses 10-hp Mercury outboard with hydrofoil just below cavitation plate.



Hook shows one of the Hydrofin's hydraulic shock absorbers to MI's Boating Editor John Kingdon.



Our own automotive expert tries out one of the new stethoscopes which modern mechanics employ in diagnosing engine ailments by ear.

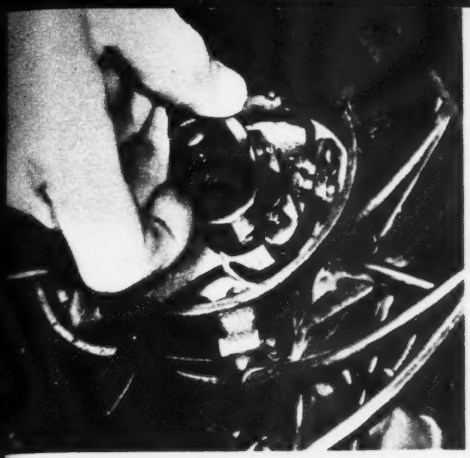
Overhaul... or Haul Away

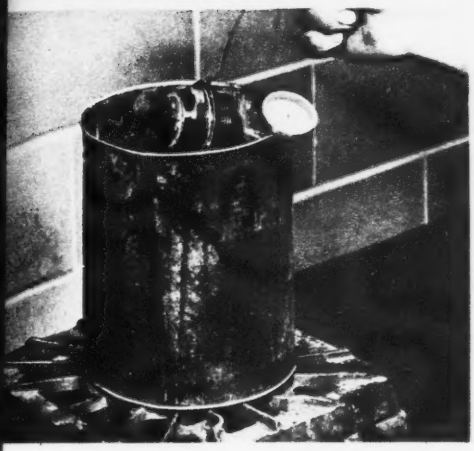
Trying to decide whether to give Old Nellie a face-lift or trade her in on another car? Uncle Tom has some tips that will help you.

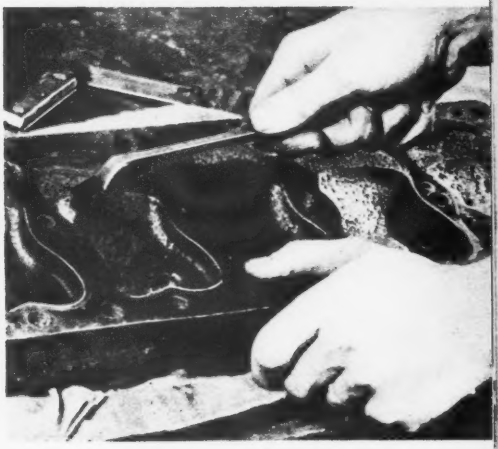
By Tom McCahill

THERE comes a time in every car's life when the owner is forced to make an important decision. Should he trade Nellie in on a new car, or should he give the old battle-ax a face lift and rebuild her? Under normal circumstances, if Oscar Owner is well heeled, the simplest solution to this problem is to trade the dated number in on a current model just before she starts coming apart from middle-age spread. But the exact moment when this critical period takes place depends a great deal on how much and where the car has been used.

Some cars deteriorate in dead storage with only a few thousand miles on them; other cars that are run moderately, meaning 6,000 or 7,000 miles a year, start coming apart usually about the third year. The guy who gets the most out of his automotive investment is the one who drives







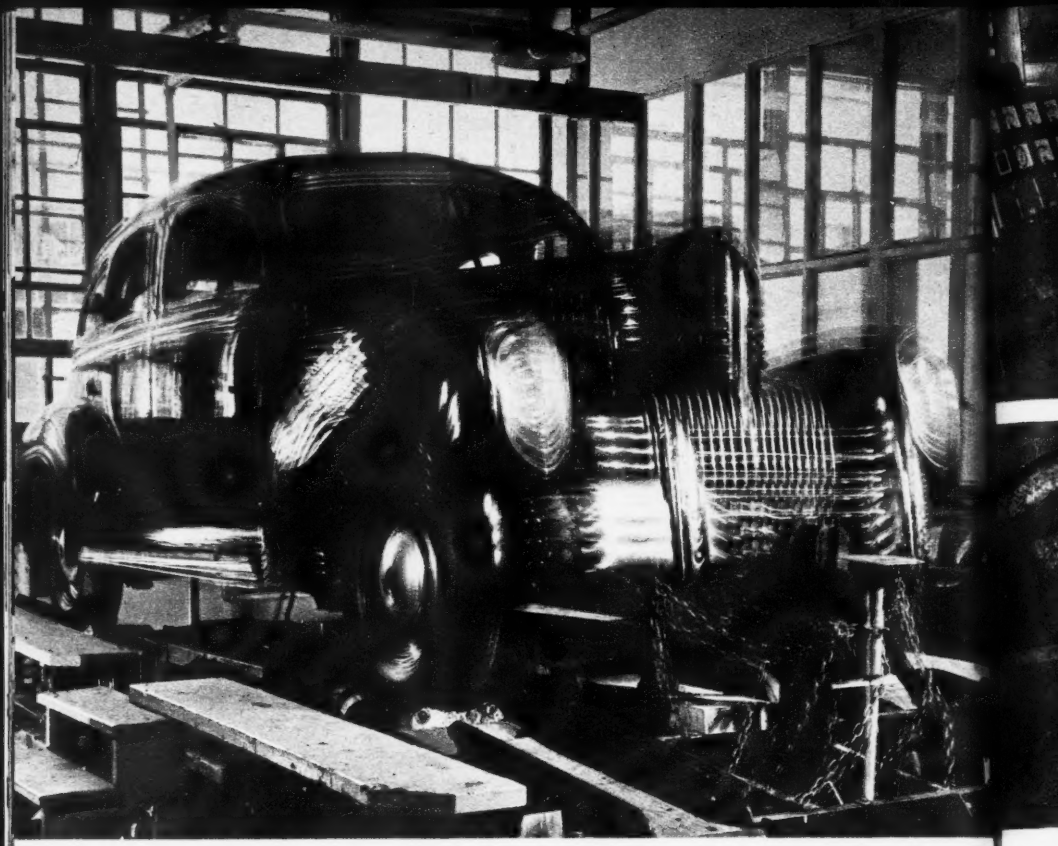
Too much play in the distributor rotor can easily be detected by feel, top. Your engine thermostat can be checked for accuracy by dunking it in hot and cold water alternately, as shown at bottom.

Our Uncle Tom is sighting along a camshaft, top, for a visual check of its trueness. Carbon on a cylinder head, bottom, must be cleaned off very carefully to avoid new carbon-collecting scratches.

40,000 to 50,000 miles a year, whether for business or just because he's restless. This character, which includes the writer, actually wears the car out by using it—and not through age, which brings on drying out of rubber mounts, tires and general breakdown due to corrosion hitting the gaskets, battery, cooling system, chassis fastenings and wiring. In some damp salt water states such as Florida and along the Gulf, this corrosion to all parts, especially chrome, is speeded up considerably and a neglected though unused car will wear out faster than one that's driven every day.

So let's consider the owner who lives in an average climate and drives his car at a compromise between the hard user and the moderate one. Let's say this fellow drives 20,000 miles a year. His car, regardless of whether it is a Cadillac or a Ford, will reach a critical period somewhere between 25,000 and 35,000 miles. If he drives well and is not brake happy, his tires will last 25,000 miles, provided he keeps them inflated slightly above the manufacturer's specifications. I got 28,000 miles out of my original Cadillac tires and still had tread on all four but I kept them at 30 to 32 pounds cold against the manufacturer's recommended 24 pounds.

About the same time well-cared-for tires should go, the battery will usually start to show signs of fatigue, especially in cold weather. Shortly after this, depending on the transmission (most automatic transmissions wear out brakes faster than this) the brakes may need relining. The fuel pump is getting to the critical stage and may need replacing and this goes for the king pins and some coil springs. Also about this



The average motorist doesn't need to give his car the "Belgian Roll" test to find out whether the body and chassis have begun to come apart at the seams. Any rugged road will do as well.

time, a second set of distributor points is in order and certainly new spark plugs. It is now in his car's life that the owner should make the decision to trade or keep the old bus because his car won't be worth one dime more to a dealer with all this work done. Dealers go by book value, which is based on average condition, so the guy who gets his car in tip-top shape before trading is only doing a favor for the man who buys his car from the dealer.

Before electing to keep the old wagon the owner should consider one more factor, especially if his car has an automatic transmission. Some of these units call for a rebuilding before the car reaches 40,000 miles and this is expensive work. The other factor for the automatic transmission man to consider is that with most of these gadgets the engine will wear out a lot sooner due to the extra rpm's needed to get the load rolling. This can cause considerable wear in cold weather, not known to the conventional transmission owner. The automatic gearshift man will usually need some major engine work such as rings, valves or reboring, quite some time before the fellow who owns an old fashioned gearshift car like mine. For these owners of automatics the trade-in-and-pass-your-troubles-to-someone-else philosophy has a lot more meaning.

But supposing that we have elected to keep the old bus, what next? Where do we start the overhaul? How do we know what's wrong with the heap? Recently, I read an article about a famous mechanic who could listen to an engine run for a minute or so and tell exactly what was wrong with it. Phooey! There are some noises a good man can spot right off as being stuck valves, a piston slap or a main bearing. But no mechanic of any integrity would state that all he has to do is listen

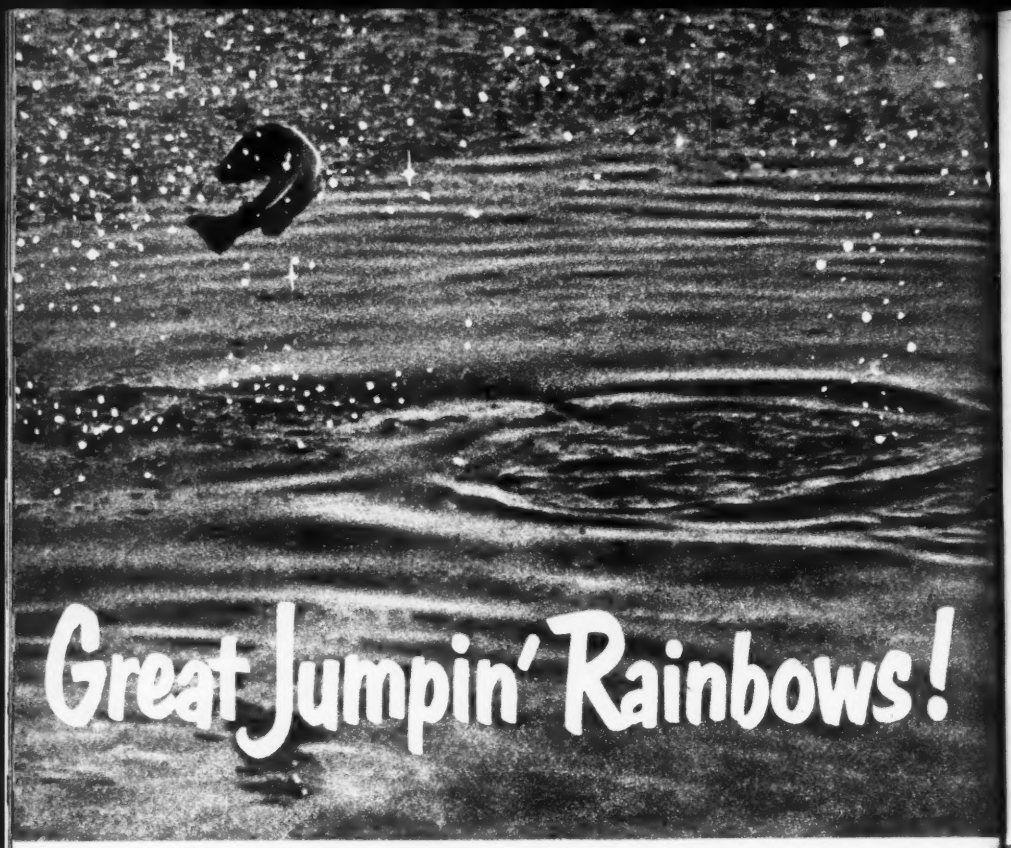
Modern tune-up equipment, top, quickly enables a mechanic to adjust timing and spot other faults. But evidence of oil leaks can be detected by eye.

Worn engine bearings, one of which the mechanic holds, produce excessive oil burning by allowing too much oil to splash against cylinder walls.

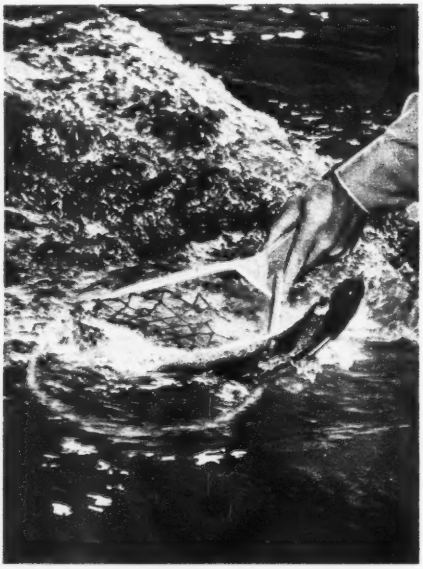
and bingo! he has the trouble nailed. Fuel pumps on some cars, for instance, often turn out to be real foolers. The first fuel pump that went sour on my Caddie had a deep regular voom, just like a main bearing going bad. This was caused by a failure of the upper diaphragm that kept the windshield wipers going when climbing a hill. Later my third Caddie fuel pump developed a squeal like a dry water pump bearing and I would have made book that the noise came from the water pump assembly until I listened in with an automotive stethoscope, like Doc Jones' but equipped with a metal probe for localizing the sound.

As engines start to wear from long use, all moving parts from bearings to distributors develop a certain amount of loose play. The noise these units make is usually most noticeable when the engine is cold because when an engine is warm, expansion takes up a lot of slack. That tenor sounding zap-zap-zap when you first start your engine is most likely a piston slap that will disappear as the engine gets warm. It is not serious and rarely demands quick attention. A deep knock-knock-knock, like Ezio Pinza might say it, would likely be a main bearing. A high pitched whining hum like Johnnie One Note singing Chloe, getting higher and weaker with speed and louder and lower as you slow down, may well be a bad rear end. This may be caused by lack of lubricant, a worn ring gear, or both.

You guys who own cars with hydraulic valve-lifts may have experienced a noise on cold mornings similar to the teeth chattering of a boatload of ghosts. This ungodly clatter is often caused by the cold oil being too thick to penetrate the small oil hole in the hydraulic valve-lift and it usually stops as soon as the engine warms up a bit. Generally this [*Continued on page* 152]



Great Jumpin' Rainbows!



You can praise the brown and brook trout. But when you've hooked a leaping rainbow, brother, you'll know you have a fight on your hands.

By Raymond R. Camp

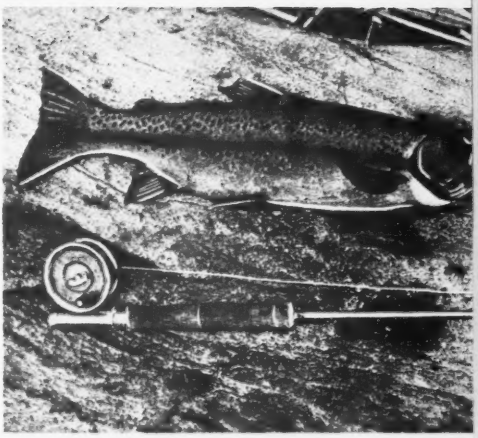
Rod and Gun Editor, N. Y. Times

From the moment he grabs your streamer and puts on his acrobatic display till you lead him, gasping, into your net, he's all thoroughbred.

IF all trout fishermen are crazy, as has been reliably reported by their wives and friends, there is no limit to the lunacy of the rainbow trout specialists. Their enthusiasm is without bounds. I should know for I once traveled over 7,000 miles, right up to the rim of the Bering Sea in Alaska, for the sole purpose of putting a fly over some "bigger" rainbows. And I'm only a lukewarm rainbow enthusiast!

The brown trout expert says his favorite is the most selective and demands the utmost in technique. The brook trout bug argues that his pet is the most interesting scrapper. The lake trout specialist contends that his sport provides the largest fish. The rainbow trout fisherman calmly announces that all three are liars and most of the time he can dig up a set of circumstances to prove he is right.

There are times when rainbows grab almost anything that moves and looks edible. But then again I have stood on the bank of a stream and watched these fish refuse a score of flies presented with a varying technique, then smash the 21st with a fury that surprised even the angler. Rainbows can be even more selective than the brown trout. Normally the browns will be feeding on a certain natural insect and if you can match this from your fly box your chances for success are excellent.



In his full regal colors, he has a bright red band on each side running from his head to his tail.

This is not always the case with rainbows. You may try several fly patterns without success, then happen on one that results in a strike. Too often this means that one particular fish took a liking to one particular fly and other fish in the same stretch of water may turn it down without a flicker of a fin.

The author found Alaska to be real rainbow country. Fish like this could be caught on almost every cast.

Silver Creek is one of the world's best rainbow streams and is a feature attraction at Idaho's famous Sun Valley. State stocks it regularly.

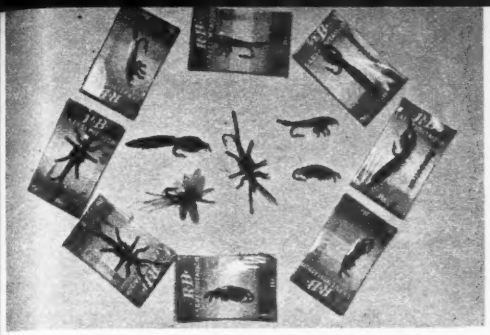
As for interesting fishing, the rainbow is no slack-water loafer. He has the stamina and spirit to hold his place in the fastest current and once you have set the hook he will lead you a chase over runs and through riffles that will require all your trout savvy. Of course, you can stand still and snub him up short—provided you are willing to lose your fly, most of your leader and possibly your rod tip.

The rainbow has another unusual trait for a trout. He's a jumping fool. He'll tear off a series of jumps any one of which can end the fight if the angler isn't alert. On this Alaskan junket of mine, I followed a 6-pounder downstream for about a quarter of a mile. It was a fast, rocky bit of water and during the course of this chase I fell only four times, which my fishing companion reported to be par for the course. After the second fall I was moving with my waders full of river water, which fact I later decided had been something of a handicap. At the time I was too interested to notice.

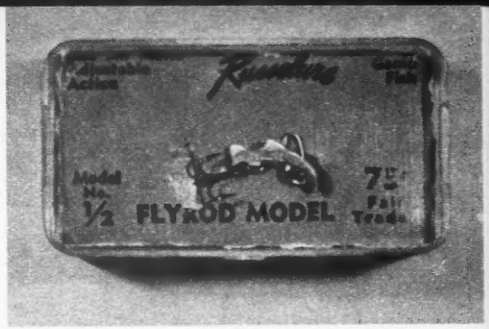
As for big fish, some of the rainbow trout that have been taken out of Lake Pend d'Oreille in Idaho and Knouff Lake in British Columbia would make the average lake trout look like live bait. These fish are known locally as Kamloops but they are merely king-size rainbows. One of these babies tipped the scales at 56½ pounds, which is an awful lot of trout in one piece, regardless of name.

Out on the West Coast where everything seems to grow [*Continued on page* 97]

They don't come any bigger than the record-breakers caught at Idaho's Pend d'Oreille, home of Kamloops.

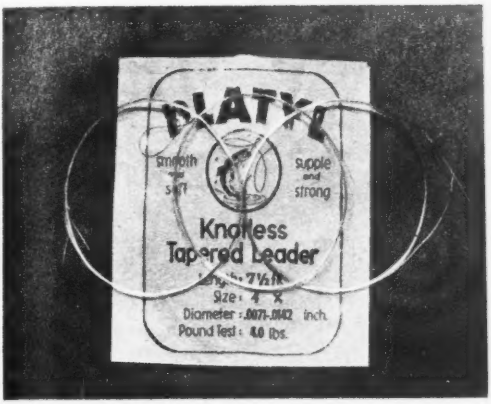


Real Imitations from Norway are these rubber nymphs, tadpole and stonefly. Lures are soft and deceive the wariest trout into striking. Chas. Garcia, Park Pl., N. Y.



Little Lure, Big Action is this bait, small enough to be handled by a flyrod. It has an amazing wiggle when retrieved. Comes in colors. Russelure, Los Angeles.

NEW for the FISHERMAN

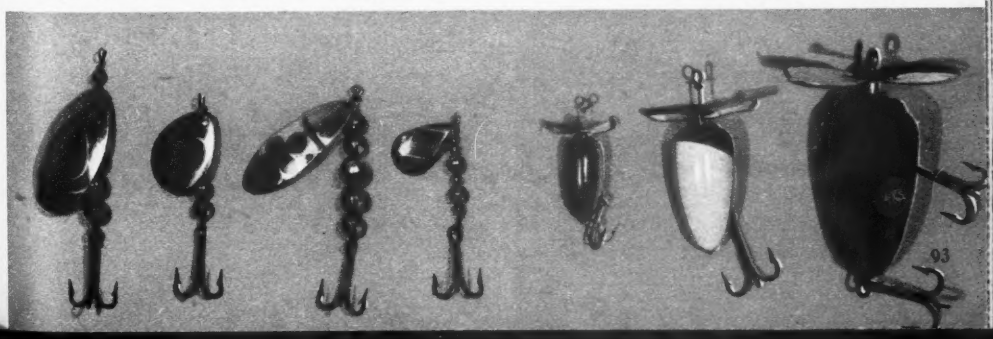


Limp Leader is an import from Germany by Chas. Garcia. It is tapered plastic, sinks quickly, ties easily. Differently colored end loops identify various strengths.

Lightweight Wader of Vinylite plastic is a stocking-foot type, flexible and damp-proof; has a special pocket inside top front. Seal-Dri Sportswear, Rockford, Ill.

Fluorescent Spinners, weighted for spinning, are named after suits of cards. Beads are plastic, blades are natural or plated brass. Herschel, Downing St., N. Y.

Black Barney is newest plug for spinning and casting. Designer claims it has more "pop" than any plug made. Also comes in salt-water size. McCagg, Mt. Kisco, N. Y.



FUR SLEUTH

If there's a skunk, mink or ermine in the case, you can bet police will call upon Max Bachrach for the solution.

By Harry Kursh

"Sheared beaver, made with Canadian beavers," is the rapid appraisal of Max Bachrach, the Sherlock Holmes of the world of furs.

"ASK the owner of this fur coat if she has been crawling in a sewer," said Max Bachrach.

A skeptical credit man in a high class Boston store had sent Bachrach, the "Sherlock Holmes of Furs," an opossum jacket that had been dyed to look like genuine skunk. It was supposed to be a rich-looking black but a day after it had been worn by the customer it turned a reddish pink.

"Crawling in a sewer? You're crazy," replied the credit man.

"Let me worry about that," Bachrach shot back. "I'm staking my reputation on the answer and I insist that you ask."

Reluctantly the credit man reached his customer by phone and posed the question. Next thing he heard was uncontrolled laughter.

In a nutshell, here's what the customer disclosed: the day she bought the coat, she wore it to a football game. Returning home in an open roadster, her boy friends grabbed the coat and had their own little football game in the speeding car, tossing the coat at each other's heads. Someone ducked. The coat flew out the car and into an open sewer.

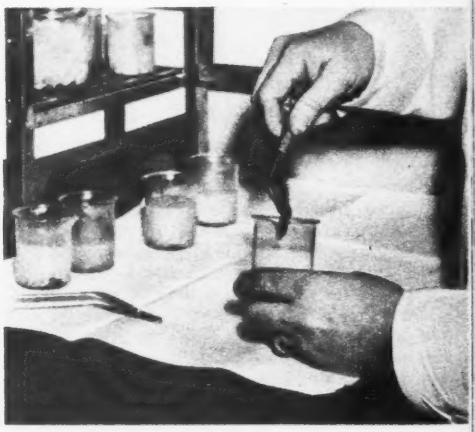
For Bachrach, that piece of sleuthing was simple. What makes skunk-dyed opossum turn from black to red? Methane gas! Where in a city is methane gas commonly found? Why, in sewers, of course!

It's for such detective work that Max Bachrach, who goes by the modest title of fur consultant, has been called the "Sherlock Holmes of Furs." In the past quarter of a century he has solved over 4,000 unique cases in one of the strangest fields of investigation.

Besides helping to send criminals to jail, Bachrach has saved millions of dollars in damage costs and insurance fees for practically every leading fur merchant and manufacturer in the country.

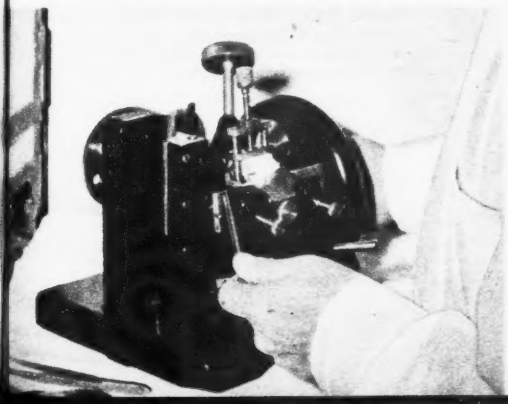
Only recently, [*Continued on page* 158]

With a couple of mink skins over his arm, Bachrach reaches for chemicals in order to make analysis.

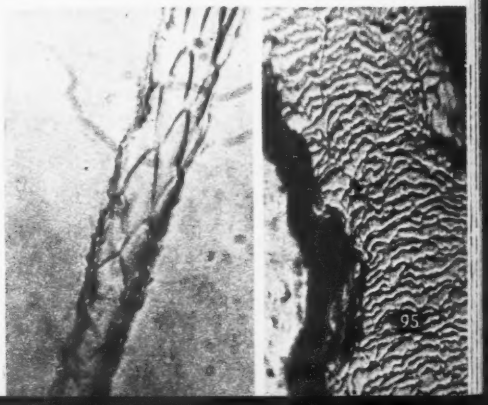


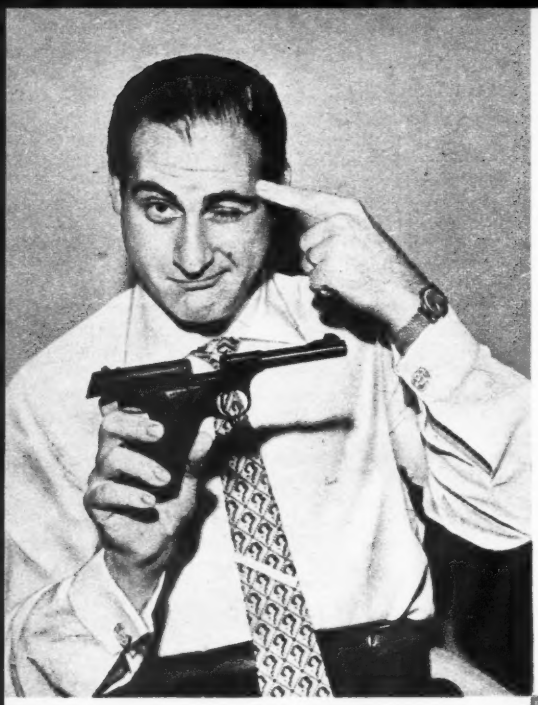
Microtome machine slices fur to one millionth of a meter and allows Bachrach to study structure.

Segment of fur is placed in liquid solution of wax which is then hardened and sliced in the machine.



Under Bachrach's microscope are the mink hair, left, and the moth damage to badger skin, right.





hobby
HALL OF FAME

SID CAESAR—TV'S BIG SHOT

WHEN one of Sid Caesar's admirers recently described the 29-year old comic as television's big shot, he was being more literal than he thought. For the famous comedian's main hobby is guns and shooting. He spends all his spare time with a fine collection of firearms. The rifles range from .22's to a .375 Winchester, all with telescope sights; the shotguns include several autoloaders and a double-barreled over-and-under, all 12 gauge. He has a number of pistols, too.

Sid considers himself a plinker and uses clay pigeons and tin cans for targets. He still remembers the time he killed a deer and felt sick about it for weeks. •

Imogene Coca and Sid Caesar, above, have proven to be Saturday night's top television entertainment on their 9-10:30 p.m. EST NBC-TV program, Your Show of Shows.

Comic Caesar makes absolutely certain he hits what he aims at by equipping this new .22 Remington Rangemaster with a giant 12-power telescope sight—great for cans.

Jumpin' Rainbows

[*Continued from page* 92]

better (according to the chambers of commerce, anyway) the rainbows have a tendency to leave the rivers and move out into the Pacific for better feeding. And apparently they find it for when they return to the rivers they are big and tough. Then they are known as steelhead, having lost some of the bright color which gave them their original name of rainbow. On their return to the river these fish are suckers for salmon-egg baits but the fly fishermen still manage to do a heap of execution with the artificials.

The rainbow is a wet-fly and streamer trout and does not react as readily to the floating fly as other members of the trout family. Also, he is inclined to be more readily stimulated by a bright fly fished with a little action. Most of the really popular rainbow rivers have special flies that enjoy local preference as "killers" and some of them are weird departures from the normal trout patterns. Flies such as the Wind River Optic, Spruce Fly, Skykomish Sunrise, Brad's Brat and Killer have no resemblance to any insect but they seem acceptable to the fish, which is of first importance to the angler.

A few years ago I was fishing for rainbows in a New England river where the fish had been stocked with great success. I approached a bend in the stream near the highway and stopped to cast a streamer into a fast riffle. On the second cast a really nice fish grabbed the lure and, when he felt the barb, surged into the air in a breathtaking leap. Just then I heard the sound of squealing tires on the highway and a car skidded to a stop off the shoulder. Two men left the car and one of them followed me along the bank while I played the fish. The other remained near a large tree in what I thought to be a rather strange posture. He seemed to be hugging the tree.

The observer at my heels watched for about five minutes, then returned to the car, jointed up a rod and began casting in the same riffle that had produced my trout. When I had my fish in the creel I looked back in curiosity and saw the man near the highway still hugging the tree. The man fishing the riffle solved the mystery.

"Don't go near that bird up by the car," he advised. "He's a bad actor. I'm the sheriff of this county and I'm taking him to the jail. He's handcuffed to that tree but he's just mean enough to kick at you if you go too close. I shouldn't leave him there, I suppose, but there might be another big rainbow in that fast water."

If you can manage a few days on one of the Alaskan rivers you will have some memorable angling, but it will spoil you for the future on your home waters. I spent a few days on the Brooks River early in the season at a time when the guide was inclined to look down his nose at the fishing, insisting that it was nothing to what it would be later. Regardless of his scorn, we managed to take rainbows up to 8 pounds, and during one morning I kept a record of the ratio of casts and strikes. There were but 9 casts that did not result in a rise or a strike from a rainbow. If that is poor fishing I am glad I wasn't there when it was good.

In addition to being plentiful, the fish were large and seemed to be unusually hungry, for they were inclined to grab up almost any lure that was offered. Even the dry flies were productive, and I tried patterns ranging in size from number 2 right up to number 10. I didn't take as many fish on 10's as I did on the larger flies, but only because the light hooks were not up to the smashing fight put up by the fish. When fish are as plentiful as they were, you are inclined to be less careful in handling them, which accounted for some of my losses.

The rainbow will often pass up every artificial offered, but cannot seem to resist salmon eggs. This has brought on something of a problem in some areas where salmon eggs have been outlawed. Anglers, however, are usually able to solve the lure problems, and in one area they have worked out an expedient that is within the law. They scoop out a bit of petroleum jelly on a finger, hold it in the cold water until it becomes firm, then mold it into a pellet and spear it on the hook. Some carry the illusion still further by mixing a reddish stain with the jelly and adding a touch of fish oil to increase the realism. The rainbows grab this fake with abandon.

Like other members of the trout family, the rainbow has been the object of considerable argument. Before the ichthyologists stepped in with their decisive reports on species identification, many anglers insisted that the rainbow, steelhead and Kamloops were three separate fish. It is now recognized that all three are the same fish, merely taking on a slightly different appearance as a result of environment.

Whether you find it in rivers, creeks or lakes, the rainbow is a game fighter, and no angler has to have more than two or three of them on the end of the line before he joins the ranks of their admirers. But if you like to fish lazily from the bank, keep away from the rainbow waters. These are not the fish for the contemplative angler. •

Cats To Cataclysms

[*Continued from page* 63]

whiskies, a not inconsiderable sum at the current price of $1.20 per.

Accordingly, underwriters decided that making a hole-in-one is a financial liability, hence insurable. The policy, which remained in force about two years, cost about $2.50 a year, and paid off at the rate of $40 maximum. One British golfer who bought the policy hit the jackpot twice in one season!

Lloyd's even found an insurable interest in the eyes of Janis Carter, a pretty Hollywood actress, and the bosom of Evelyn West, California showgirl and dancer.

Janis' studio claimed she possessed a pair of violet orbs which were the sexiest eyes in the world and asked Lloyd's to insure them for $500,000. The policy was issued.

Evelyn had her comely bosom insured for $50,000, paying an annual premium of $122.22. Her application was accompanied by a number of photographs and the policy specifically described just what changes Evelyn's figure must undergo as time goes by in order to qualify for a claim.

Paramount Pictures had an insurable interest in the famous movie cat, Rhubarb, Lloyd's underwriters decided. They wrote a policy, amount undisclosed, insuring it against death or injury. The rules: Rhubarb must fly only on scheduled airlines, stop only at the finest hotels and be accompanied at all times by a trained handler. Attached to the policy are a number of identifying characteristics—his front and side photographs, a print of a paw and a sound track of his meow.

Lloyd's has issued countless policies on legs over the years. The first to start the trend was Mistinguett, the French singer and dancer who still displays her gams in Parisian music halls, at an age variously estimated between 63 and 84. The shapely limbs of Marlene Dietrich are insured for $500,000, too. Gals aren't the only ones—Fred Astaire, for one, had his legs insured for $800,000.

Monte Wooley, the college professor who turned actor, had his beard insured at Lloyd's for $20,000 against destruction by fire, theft, hail or tornado. He paid a $25 premium.

Only recently, Lloyd's actually insured an entire contingent of troops going into battle. The Turkish government decided to send 4,500 officers and men to join the United Nations forces in Korea, but it was faced with a dilemma. The nation was not at war and if an accident occurred on the air trip to the fighting zone, according to Turkish law, the soldiers' families would not qualify for pensions.

Therefore, Turkey applied to Lloyd's for a policy covering the entire contingent—and got it.

Many persons ask for policies but are turned down on that insurable interest angle. When a trumpet player had his lips insured for $350,000, his girlfriend wanted to know if she could have *her* lips insured. Claimed if anything happened to them, her boyfriend would up and leave her. The plan was turned down.

Lloyd's once received a letter from a man who wanted to have his neck insured. Investigation produced the lamentable fact that said neck was about to be stretched—via the hangman's noose.

There are a few things that cannot be insured, despite the obvious insurable interest. You cannot insure yourself against divorce, poverty, the loss of your job or killing anyone. Lloyd's, moreover, will not insure Broadway producers against a flop play or newspaper publishers against dips in circulation. The underwriters do not issue life-insurance policies, but they do insure beneficiaries of such a policy against the possibility that the holder will commit suicide.

The amount of the premium you have to pay under a specific policy depends upon the circumstances of the particular case. Weather insurance comes high, usually between 15 and 20 per cent of the total sum involved, depending on the locality. Insurance against twins costs about four per cent, but may be higher if twins run in the family. You would have to pay about a three per cent premium for insurance against your child being born with a clubfoot or a harelip.

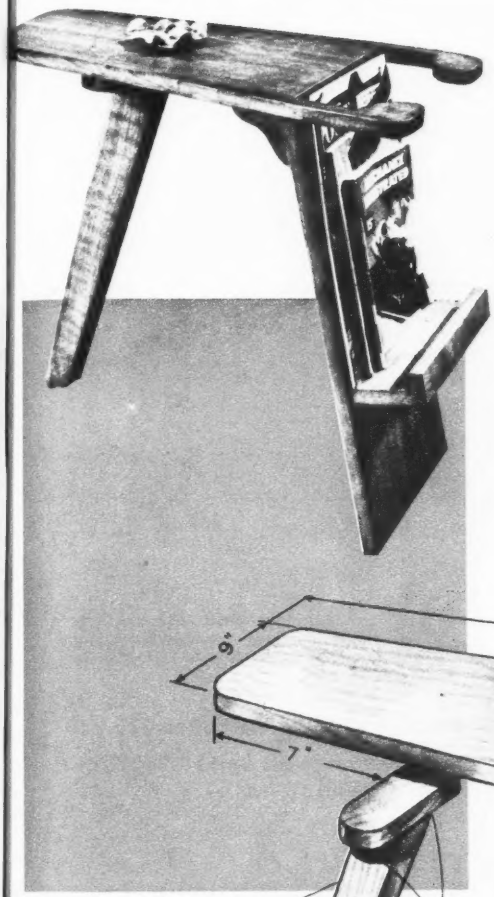
How about payoffs? Lloyd's underwriters have been hit, and often, for sums ranging from tiny to terrific. They paid $350 to a Salt Lake City man whose son was born with a harelip and wrote checks totalling $5,000,000 after storms devastated large areas in Texas in 1943. The loss of the ill-fated Titanic, which sank after ramming an iceberg on her maiden voyage in 1912, cost the underwriters $4,000,000. When the frigate Lutina went down off the coast of Holland, carrying $6,000,000 in gold bullion, Lloyd's paid off. Then there was the matter of a $5,000,000 insurance policy covering the cargo of the merchantship Egypt, which sank in 1922, its hold jammed with gold and silver.

Only recently, a surgeon in Kansas City stumbled and fell while cleaning a rifle. The gun went off and the bullet penetrated his foot, which had to be amputated. He collected $400,000.

When the famous racehorse Your Host was

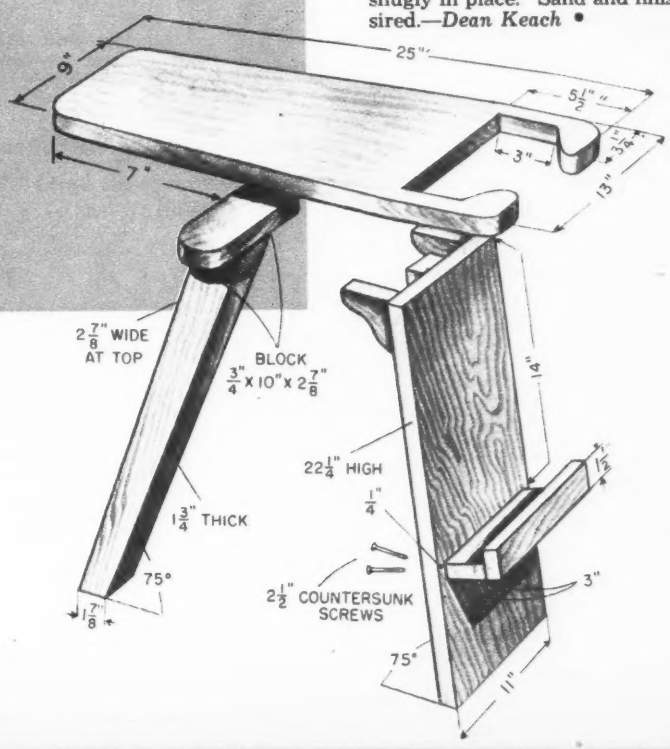
[*Continued on page* 162]

magazine table



PUT your band saw to work, and emerge with a handsome, up-to-date piece of furniture. Any attractive wood may be used. After gluing up your stock and sawing to proper lengths, cut out the recess in the top.

The two pieces forming the magazine rest are glued at right angles and attached to the front leg with countersunk 2½-in. screws. Both ends of the rear leg are cut at 15° angles before the longitudinal taper is cut. Fashion the wooden brackets and the small block; the latter is cut to a 15° angle to fit snugly in place. Sand and finish as desired.—*Dean Keach* •



HI-FI RECORD PLAYER

The antique, circa 1932, and how it now appears, revamped into a charming Colonial finish record player.

High fidelity equipment need not be expensive. For less than $75 you can make a record player with a frequency response up to 10,000 cps.

By Clarence A. Martin and Milton Nichols

HOW would you like to own a modern three-speed record player without having to spend very much of your hard-earned cash? You can if you are willing to spend time and energy. Select an old radio cabinet that has good basic lines and one that will need a minimum of rebuilding. You will be in for a pleasant surprise when you remove the old finish and find the beautiful wood that is underneath.

In addition to the cabinet, you'll need an amplifier, a two or three-speed turntable, a pickup arm, and a speaker. If you want to have longer uninterrupted playing, you'll want to substitute a record changer for the straight turntable and its motor. But, more about the electrical components later.

First, lets start to renovate the old radio

cabinet you have selected. Most all of the old finishes are of varnish which should be taken off down to the bare wood with paint and varnish remover. The remover is applied with a brush and allowed to stand until the finish has softened. It can then be removed with a putty knife. Generally a second or third application will be necessary before the beauty of the original wood is completely exposed.

When no trace of the original finish remains, the complete surface should be thoroughly cleaned with steel wool saturated in alcohol to remove remaining paint and varnish remover.

At this point any rebuilding or repairing of the cabinet should be completed. It may be necessary to make a new speaker grill, to close in the back, to make provision for record storage, to box in the speaker cabinet, or to make a new platform for the motor and pickup arm.

The final finish desired will determine the next steps. You may find that you are completely satisfied with the appearance of the original wood. If so, your troubles are over as you can give it one of several types of finishes.

If however, you find that the wood is too dark for the finish that you want, a bleach is necessary. Don't worry too much about this job as the modern method is comparatively simple and effective. Just a few years back we had to be content with oxalic acid, chlorine, and hydrosulphite. These worked but not as well as those on the market today. The vogue for blonde finishes has made necessary the development of some very potent wood bleaches. These bleaches are used in pairs. Both are strong caustics.

Follow maker's directions carefully for good results. More than one application may be necessary if the finish desired is extremely light. When bleaching is completed, wash all the surfaces thoroughly with soap and water, rinse with clear water, and wipe dry.

When the wood is thoroughly dry, it

Hammer and chisel are used to remove the gingerbread which festooned the old radio cabinet.

The old parts should be saved as they may come in handy as templates for cutting new panels.

Several applications of paint and varnish removers will be necessary to remove all of old finish.

Remover is washed away with steel wool and alcohol. Note new speaker grill at bottom of cabinet.

Next step is bleaching. Work from a glass container and do not return unused bleach to bottle.

Mount wiring diagram of amplifier over your work table and check off each connection as you make it.

should be prepared for the finishing process. This calls for patience and plenty of elbow grease, as the basis for any good finish is a smooth clean surface.

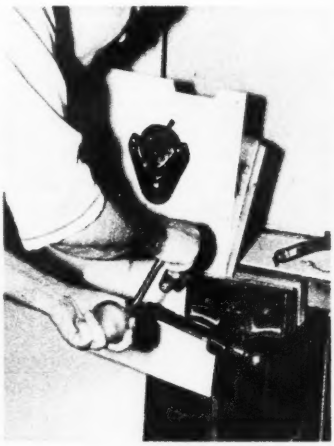
If the bare wood is not the color wanted it must be stained with a water stain. Any new wood that was added should first be given a very light coat of shellac, varnish, or lacquer sealer, depending upon what will be used for the final finish. This is necessary to keep the stain under control by wiping off any excess amounts at the correct time. After staining, lightly sand the surface to remove the raised grain. Follow with a sealer coat.

Usually, when finish has been removed, a filler is not necessary. This is also true at any time with fine-grained woods such as maple or birch. If you find that a filler is necessary, it should be a standard paste type with a silex base, thinned to the proper consistency with turpentine. Apply it with a brush and wipe off across the grain with burlap just as it starts to harden. It is very important to remove all of the filler that is not in the pores. That remaining must be given a chance to become thoroughly dry before proceeding or the final result may show a cloudy or grayish finish, or a haze.

Sand lightly, apply a sealer coat, and sand again when dry. If everything has proceeded smoothly up until now, the end of the finishing process is in sight.

The job should be completed by applying several coats of the same material used for the sealer—shellac, varnish, or lacquer. Each coat should be rubbed well when dry. A professional job would be done with

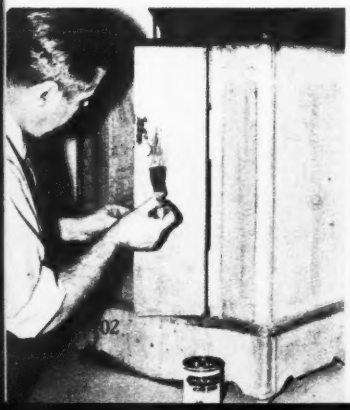
Amplifier is mounted in cabinet on side for access to controls. Cut holes in rear for ventilation.



Use a cardboard as a template before cutting the openings for the record motor and the pickup arm.

Mounting the speaker. It is slightly canted to bounce sound off floor. May also be boxed in.

Finished cabinet was given several coats of Minwax, each rubbed down to a satin finish.



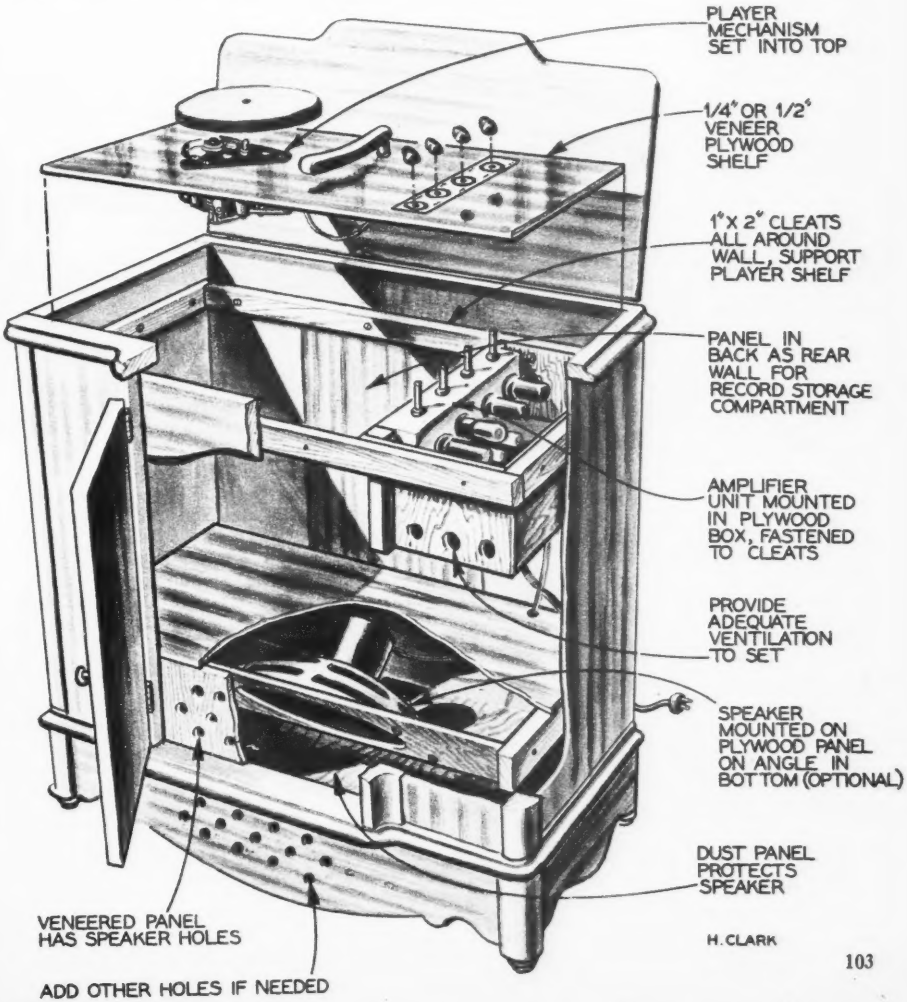
Since LP's play for 20 minutes on one side, a single play turntable was installed instead of changer.

Final finish consisted of an application of paste wax buffed down with an electric drill.

pumice, however, a very satisfactory job can be done with a fine grade of steel wool. For the final rubbing, load the steel wool with paste furniture wax.

Many will think that this finishing process is too complicated, is too much hard work, or that it takes too long. There is no satisfactory shortcut until the finish has been removed and the wood bleached, if necessary. At this point Minwax, a penetrating stainwax finish, may be used in lieu of the conventional finishes. This gives the surface a rich, soft wax finish that is easy to apply, that preserves and protects the wood, and is easily maintained. A first coat is applied with a brush or a cloth and the surplus removed after it has been allowed to penetrate. This is repeated after an overnight drying. Follow with a thorough polishing with a furniture paste finishing wax and the job is complete.

Some defects such as splits, scratches, dents, or damaged spots may be found when rebuilding or remodeling the cabinet. These can be remedied with a shellac stick. The method of using is not very difficult to learn. The shellac stick is pressed on a very hot (but not red) knife blade. It will melt and adhere to the blade which should then be drawn over the dent. If the defect is a crack, use the edge of the knife blade only. If the dent is deep it will be necessary to repeat the process until it is filled as each hot layer will melt and adhere to the one underneath. Work must be fast once the shellac is on the knife. After it has hardened it rubs and finishes just about the same as wood. [*Continued on page* 143]



Easy Chair

By Doris E. Beardsley

Employing a novel, yet simple, design, this unit can be made with hand tools in a weekend.

A SINGLE sheet of ¼-in. plywood and some 1x4-in. pine are all you need to make the frame of this comfortable chair. Arm frames are built first. For ease in construction the butt joint is used.

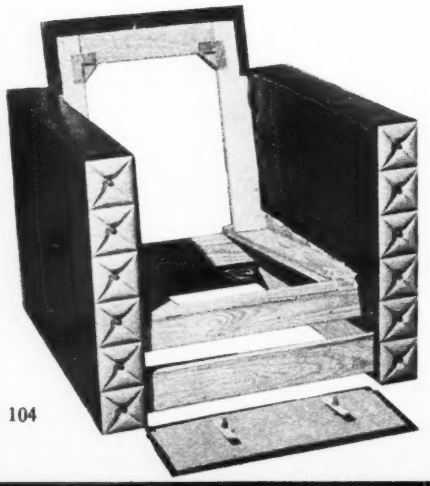
The three cross members (two at the front, one at rear) are set inside of the arm frames. The lower front member rests on its lower edge, as shown in the sketch. Screw or nail it to the upright arm framing members. The back cross member is fastened 1½ in. above the bottom framing members. Mark and cut out two notches in the third cross member, and screw or nail 2 in. above the bottom front cross member.

Place small ends of the "inside arm" plywood panels in position and nail with galvanized shingle nails. These panels hold the corners square, and when the outside panels are nailed to the outside arm frames, the chair becomes very rigid.

Fit and nail the two 1x4x31¾-in. seat supports in the notches cut in the front cross member. The opposite ends of these boards are screwed to the back cross member, forming the slant for the bottom cushion. Nail the edges of the "inside arm" plywood panels to the edges of the slanting boards.

The support for the back cushion is constructed by placing a 15-in. length of 1x4 between the two 1x4x24½-in. boards. The "L" type of angle brace may be used for extra support. Insert screws at an angle from the side pieces.

Fit the back support in the chair frame,



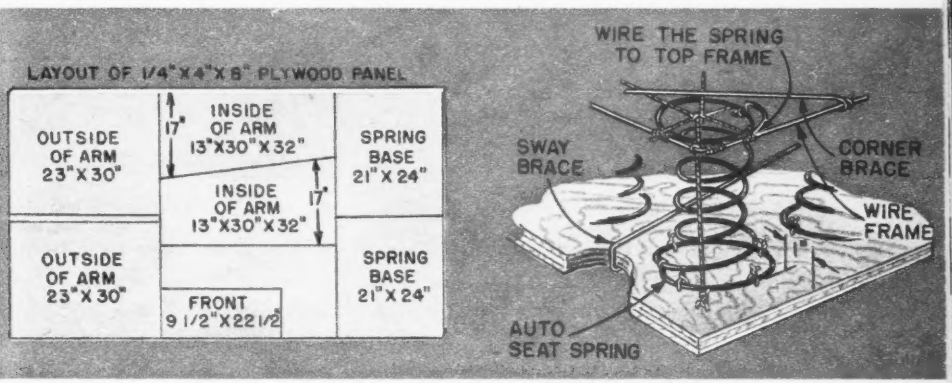
Left: Both pillows may be taken off by removing a few screws. Lower front panel is attached with wooden cleats, bolts, and wing nuts. Micklin metal corners were used instead of L-brackets.

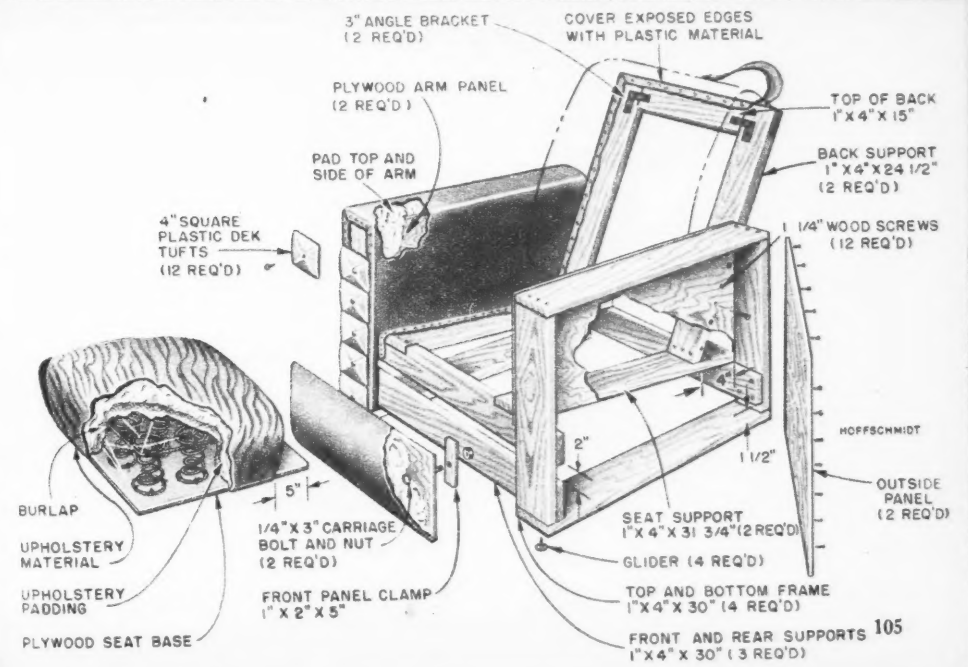
setting the bottom 4 in. from the rear. Cut the miter to make a flush fit, then glue ends and fasten with screws.

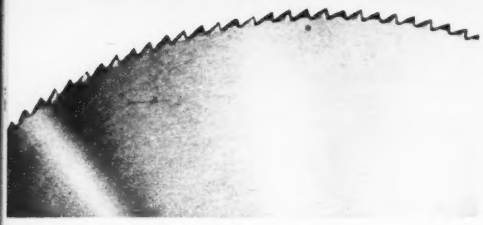
Turn chair upside down and bore holes through bottom boards. Drive screws into the ends of the back support. Check entire frame for squareness before nailing the two outside plywood panels to the arm frames. Smooth any rough edges with wood rasp.

The springs for the cushions are from an old automobile seat. Some of the springs are a little longer than others. Four of the longer springs are used in the middle of the bottom cushion. Space springs equally, four to a row with the four longer springs in the middle. The springs are mounted on the 21x24-in. plywood base. Set springs 1 in. from the front and sides and 5 in. from the back of the base. Fasten springs to the base by drilling six small holes, three on the outside and three on the inside of each coil. Cut soft iron stove wire into 75 pieces about 3 or 4 in. long. Bend each wire in the middle (like a hairpin), slip the two ends of the wire over the coil, and through the drilled holes. Twist the ends of the wire on the bottom side of the base with a pair of pliers.

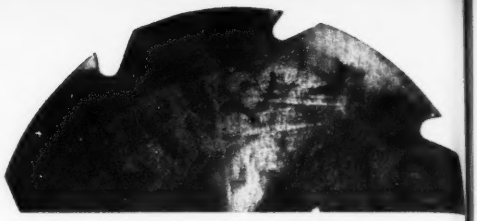
The heavy wire from the automobile seat forms the frame around the top of the coils, and the outside edge of each coil is fastened to the heavy wire [*Continued on page* 146]







Small-toothed blade is designed to cut metal of the gauge usually encountered in the home workshop. Be sure to wear goggles during operation.



Eight-tooth combination blade, a relatively new design, is reputed to reduce kickback considerably. It produces chips rather than sawdust.

Know Your Saw Blades

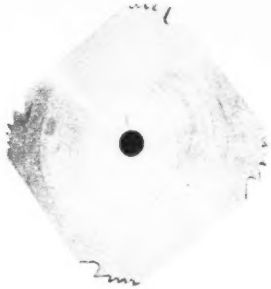
This blade should be used for ripping exclusively. Don't try to use single-purpose blades for various operations—you'll ruin both blade and project.

Despite its resemblance to the blade at the left, this unit is a combination blade. Note that the teeth are somewhat shorter in the above blade.

IF you've been using just one blade for indiscriminate cutting of all lumber products, you've already appreciated the need for specialized blades. You simply can't expect a combination or rip blade—even a good one—to breeze through ¾-in. plywood, Masonite, or tough wallboard.

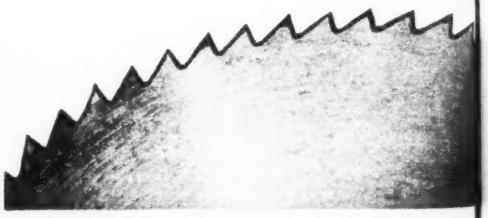
Manufacturers, well aware of this problem, are releasing new blades designed to perform specific jobs. Pictured on these pages are the most common types of blades, plus several special ones that you should consider.

Regardless of the type of blade you are now using, you can lengthen its life span by following the tips outlined in the diagrams at the right.—*Arthur R. Roalman* •

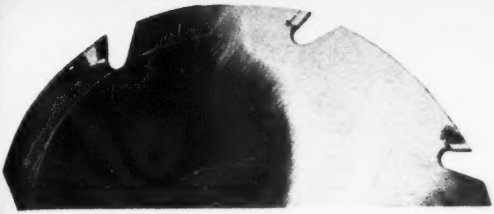


New square blade, for crosscutting and ripping operations, is supposed to reduce friction and save power costs, according to the manufacturer.

Cut-off blade is the ticket for whizzing through used timbers, where you're liable to come up against old nails which may not be visible.



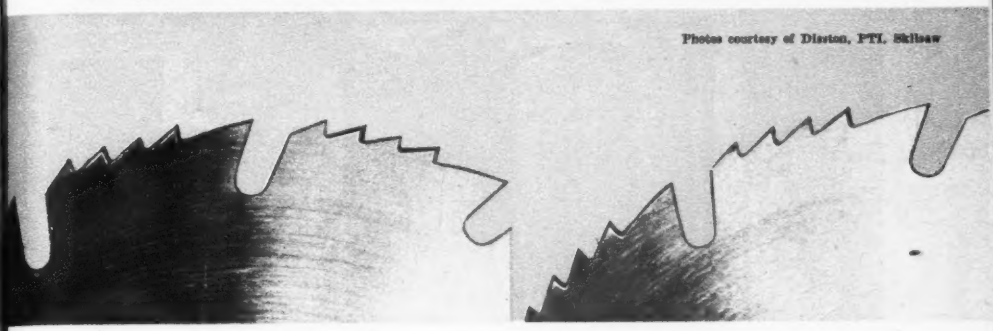
Here's a versatile blade that you can use for soft metals, Masonite, and those extra-hard wallboards. Set on teeth is less than on the cut-off blade.



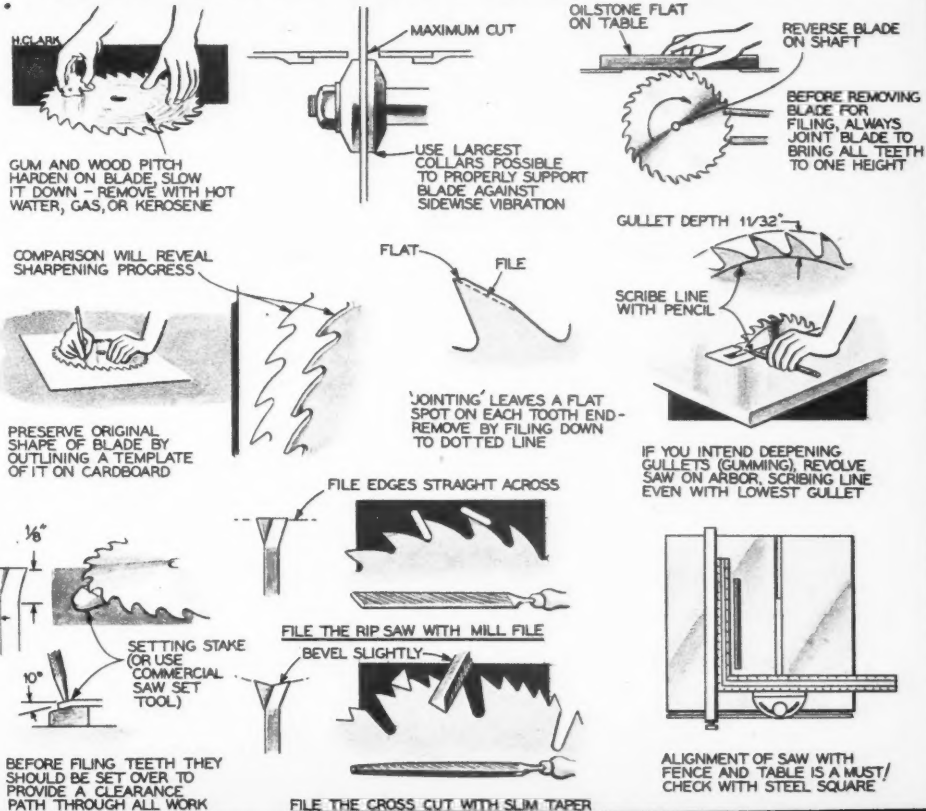
Carbide tipping, which has been so successful in keeping lathe chisels sharp indefinitely, has been applied to PTI blade. Note reinforced teeth.

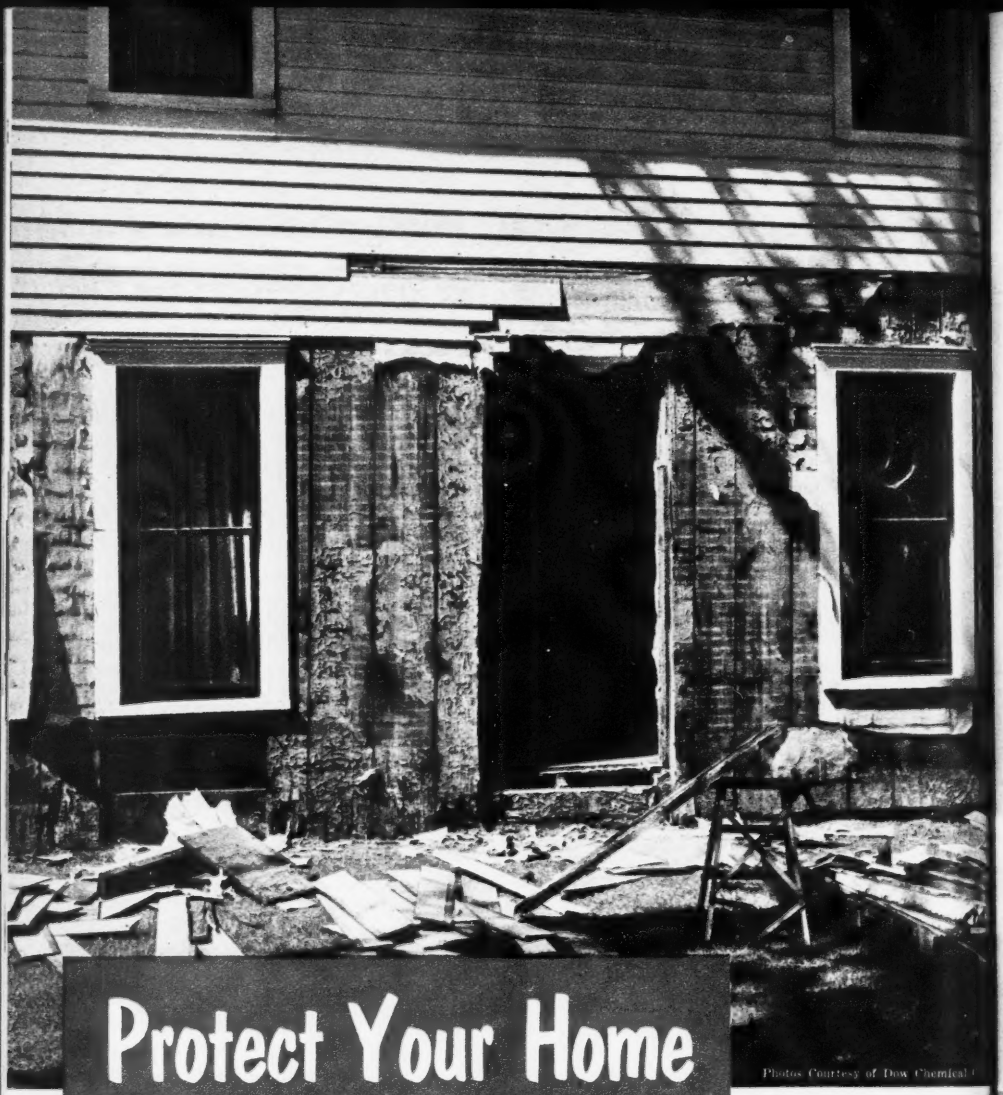
Although it bears no resemblance to the common saw blade, the abrasive cut-off wheel is ideal for cutting soft metals, pipe, or copper tubing.

Photos courtesy of Disston, PTI, Skilsaw



Basic blade in any shop is the combination type. Unit at left is hollow ground, which makes very smooth cuts when used for crosscutting or ripping. Blade at right is flat ground. In the latter, clearance is induced by the set of the teeth, not by teeth-to-bore taper as on hollow-ground blade.





Photos Courtesy of Dow Chemical

Protect Your Home Against Termites

If you think termite gags are funny, take a look at the damage inflicted on this home. Siding and building paper vapor barrier had to be replaced.

These uninvited guests who eat on the house may not be one of your maintenance problems, but you should be familiar with a few basic preventive measures.

By Robert Scharff

TERMITES, those residential fifth columnists, are pesty insects that eat fifty million dollars' worth of property annually. True, they're not in every home, but it's a good idea to look around for them at least twice a year. If evidence of termites is found, you'd better declare war!

There are 58 species of termites in the United States. The most annoying little fellow is the subterranean kind; in fact, it is estimated that 99 per cent of all house-dwelling termites are of this type. As the name indicates, subterranean termites build their nests or colonies either in the ground or in wood that is in contact with the ground. There may be any number of such colonies in contact with the woodwork of a dwelling, and tens of thousands of termites may inhabit each colony.

The sudden appearance on an early spring day of a swarm of winged insects inside the house is usually the most common indication of the presence of termites. Even though the actual flight of these pests is not observed, the presence of their discarded wings is a positive indication of a well-established colony nearby. Flying termites can be destroyed with an insect spray, the formation of new colonies thus being prevented.

A more obvious indication of termites is evidence of their damage to wood. The distinctive feature about the work of termites is the fact that they actually consume the wood as food, leaving no residue other than their excrement. In this manner termites often remove so much of the wood that only a thin shell is left. To test a timber for termites, try to push an ice pick into it. If the pick goes in easily after it has been started, then the inside of the timber may be hollowed out.

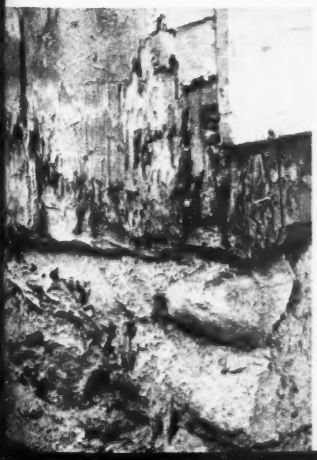
Termite infestation may also be detected by the presence of earth-like shelter tubes which the insects may construct over the surfaces of foundation walls. These afford runways between the ground and their source of food, and vary in size and shape from ¼ to ½ in. or more in width and flattened against the supporting surface. Prevention of termite destruction is based on breaking these connections, since termites must maintain a constant supply of moisture through an unbroken connection with the ground.

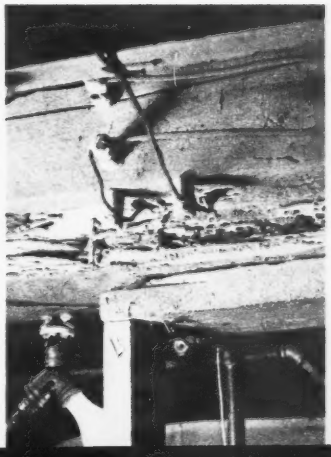
The only positive method is a permanent non-corrosive metal shield between the top of foundation walls and the bottom of the wood sills. This shield must be made in the general shape of an inverted U fitted over the foundations, with the sides of the shield sloping outward and downward about 2 to 3 in. Termites cannot build their tubes in a downward direction; therefore, as long as the projecting sides of the shield remain in their original shape and are not knocked back into contact with the wall, excellent protection is obtained.

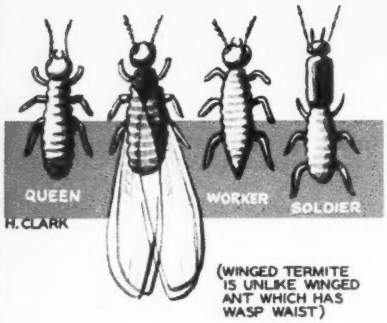
The shield over the top of the foundation prevents their entry through the masonry of the foundation wall itself. This shield is best put in when the house is being built, but whenever possible the shields should also be inserted over or in the masonry foundation of old buildings, too.

If the foundation is of masonry or concrete, inspection should be made for cracks or openings through which termites can build their shelter tubes. All cracks should

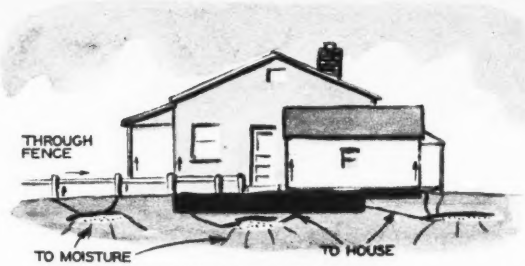
Typical infested areas could have been protected (see sketches on next page). Termites burrowing under foundation, left, weaken entire structure. Even joists are subject to attack, center. At right is closeup of doorsill shown in lead photo.



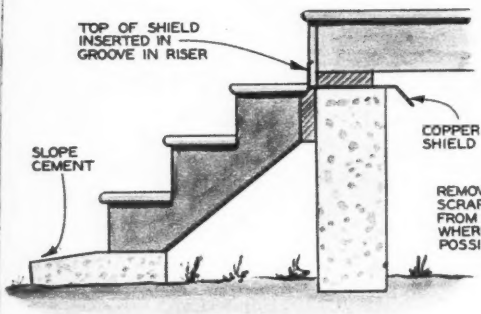




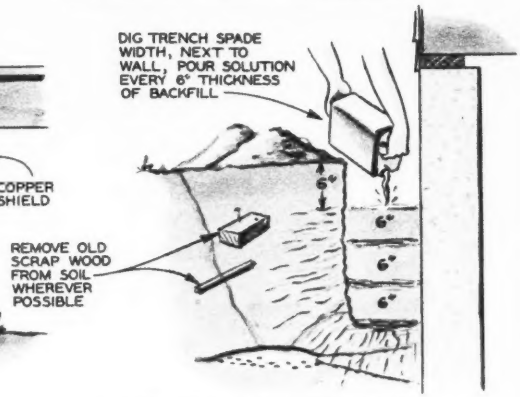
(WINGED TERMITE IS UNLIKE WINGED ANT WHICH HAS WASP WAIST)



TERMITE COLONIES BREED NEAR HOUSE BURROW CHANNELS LEADING TO WOODWORK



LOCATION OF COPPER SHIELD BETWEEN WOOD STEPS AND PORCH TO HOUSE, CUTS OFF APPROACH OF VERMIN FROM THAT DIRECTION



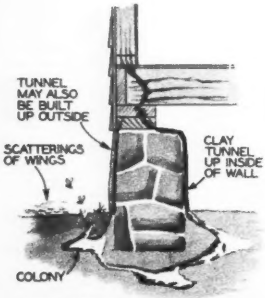
CRUDE ORTHODICHLOROBENZENE WILL POISON SOIL ALONG FOUNDATION, KILLING OFF ANY FURTHER COLONY DEVELOPMENT

be carefully sealed and a capping of dense Portland cement mortar placed over the foundation.

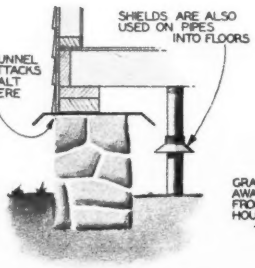
When reconstruction is not possible, the buildings can be protected for considerable periods by poisoning the surrounding ground. A material that gives good results for this is crude orthodichlorobenzene, a noninflammable liquid that can be obtained from chemical houses. It can be used full-strength at the rate of 1 gallon per 12 cubic feet of soil, or in the proportion of 1 part of orthodichlorobenzene to 3 parts of light fuel oil applied at the rate of 1 gallon of the mixture per 5 cubic feet of soil.

The poison should be applied to soil adjacent to a masonry foundation wall. First dig a trench the width of a shovel and to a depth of at least 24 in. A portion of the chemical should be applied to the bottom of the trench and the balance of it at about 6-in. intervals as the earth is replaced. This will provide an even distribution from bottom to top. Under basementless areas, a trench only a few inches deep is sufficient.

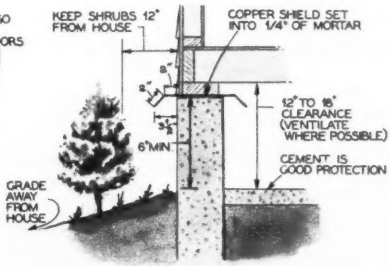
Where valuable [*Continued on page* 146]



SUBTERRANEAN TERMITES ENTER GROUND FROM OUTSIDE, BURROW UNDER FOUNDATION IF SHALLOW, BUILD TUNNELS TO WOODWORK

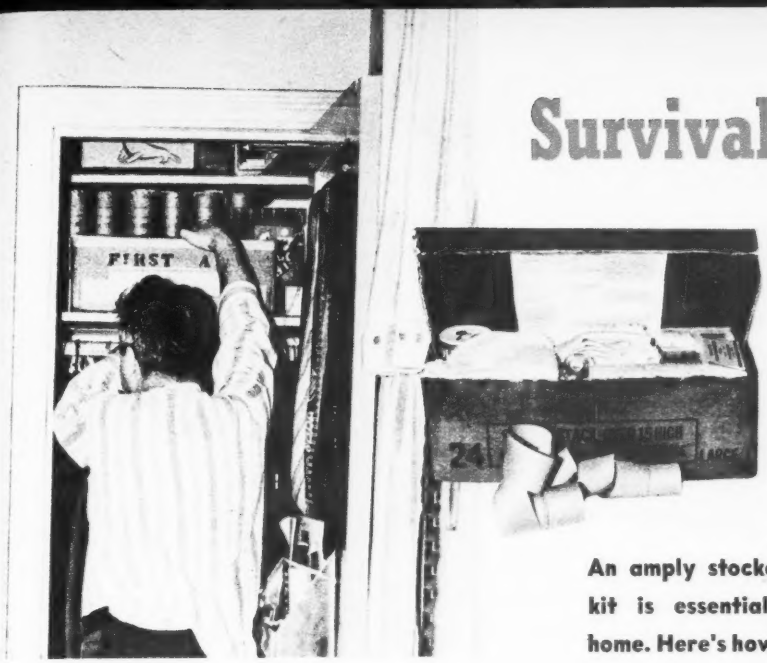


PROTECTION COULD HAVE BEEN ASSURED BY USE OF COPPER OR OTHER METAL SHIELDS PLACED ON FOUNDATION UNDER WOODWORK



IN NEW CONSTRUCTION OF CELLARLESS STRUCTURE, THESE ARE PROCEDURES FOR PROTECTION AGAINST TERMITES

Survival Kit



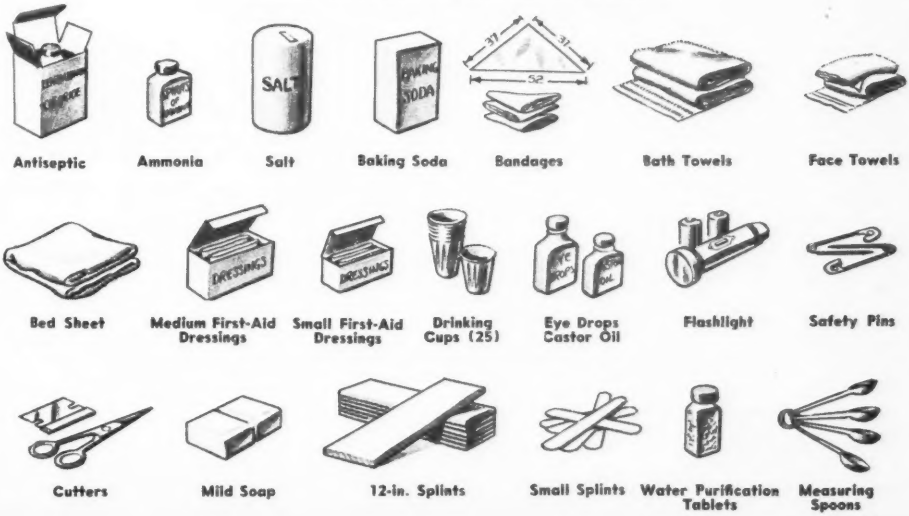
An amply stocked first-aid kit is essential in every home. Here's how to pack it.

DISASTER can strike at any time, in any home. It need not necessarily be an atom bomb, but might arise from a fire, explosion, or any other accident where emergency action is needed. The U. S. Office of Civil Defense has issued a list of 20 essential first-aid items, and it is recommended that these be in addition to the usual articles found in your medicine chest. This equipment should be stored in a moisture-resistant container in your home shelter area.

The purpose of most of the items shown in the sketches below is obvious, but there are a few that need a bit of explanation.

Benzalkonium chloride is an antiseptic to be used in the proportion of 1 part of the chemical to 1,000 [*Continued on page* 147]

A family of four persons or less should include the items shown below in their first-aid package.



Antiseptic · Ammonia · Salt · Baking Soda · Bandages · Bath Towels · Face Towels

Bed Sheet · Medium First-Aid Dressings · Small First-Aid Dressings · Drinking Cups (25) · Eye Drops Castor Oil · Flashlight · Safety Pins

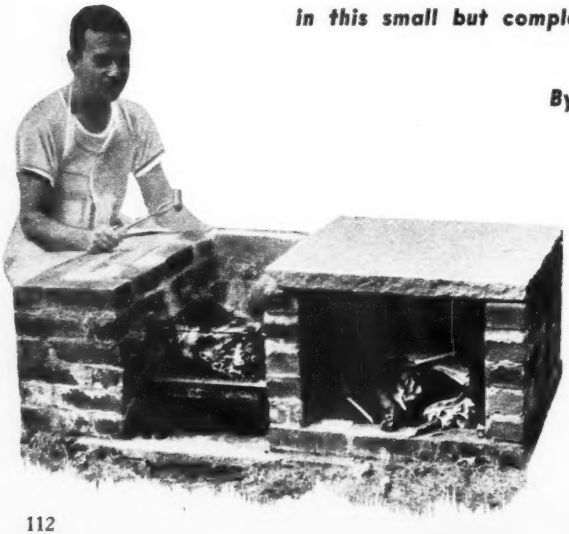
Cutters · Mild Soap · 12-in. Splints · Small Splints · Water Purification Tablets · Measuring Spoons

outdoor grill

Compact grill easily accommodates ten wienie-starved diners (don't forget to count the photographer). Entire unit rests on a 4-in. slab of cement and gravel. You'll need about 125 new or used bricks to complete project.

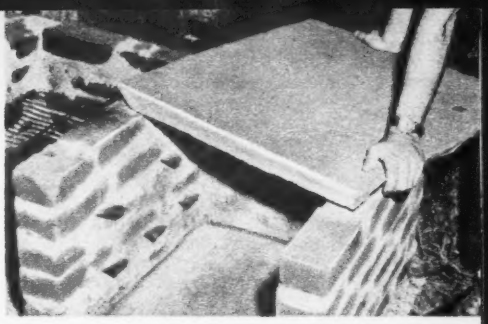
A discarded hot-air register, which may be removed when desired, controls the draft in this small but complete picnic-maker.

By Irving Grossman



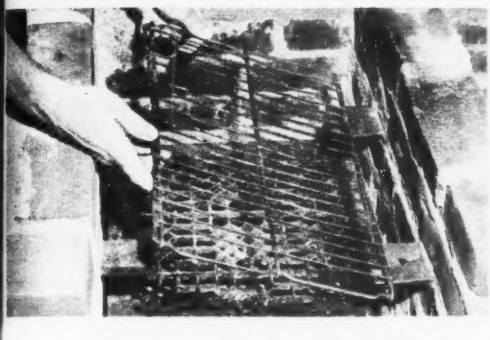
Builder Grossman, a mean man with a barbecue fork, proudly serves as host. A kindling fire rests on top of the register, but you'll be able to control heat from a charcoal fire if you build it on the concrete base.

First step in construction is to make the 4-in. bottom slab. After letting it cure, lay the brick.

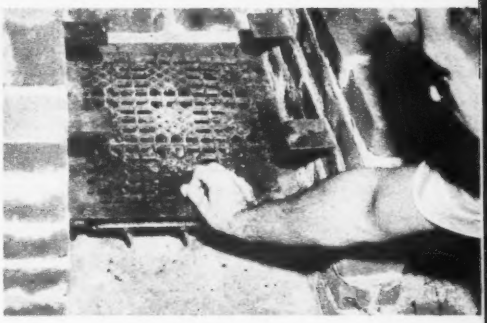


You might want to substitute sheet metal for this slate slab that protects your fuel from moisture.

When laying sides of firebox, insert pieces of strap iron for shelves. See sketch for positions.



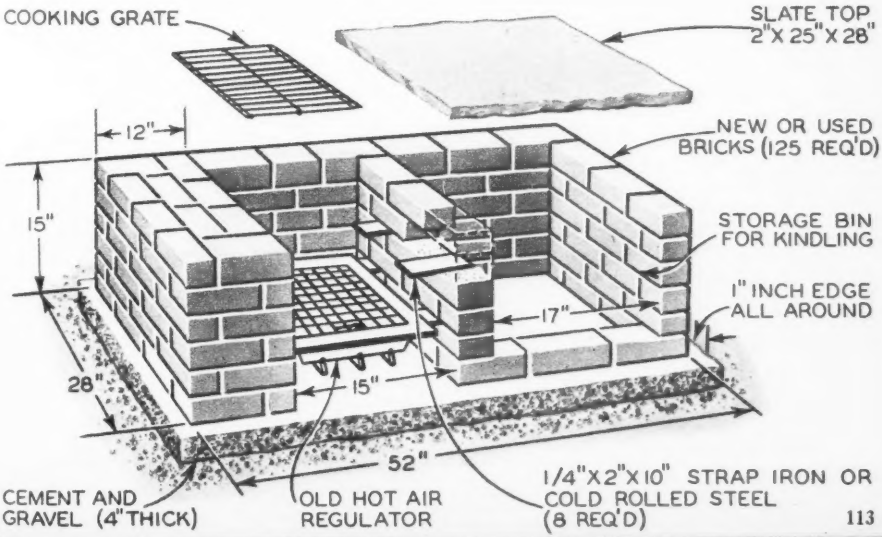
Hot-air register is an ideal device for controlling the draft, whether fire is below or above it.

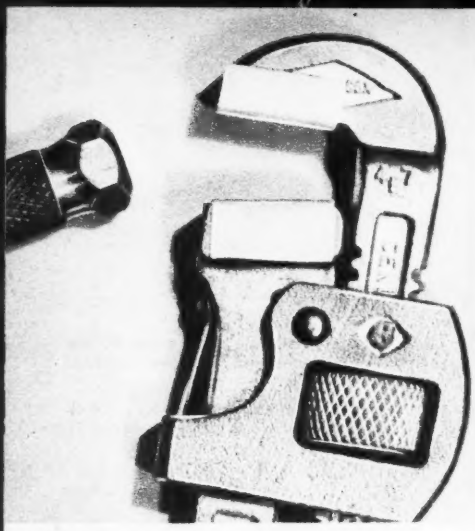


YOU don't need much backyard space in order to erect this economy-size grill. Bricks, slate, and register can be bought at yards handling used building materials.

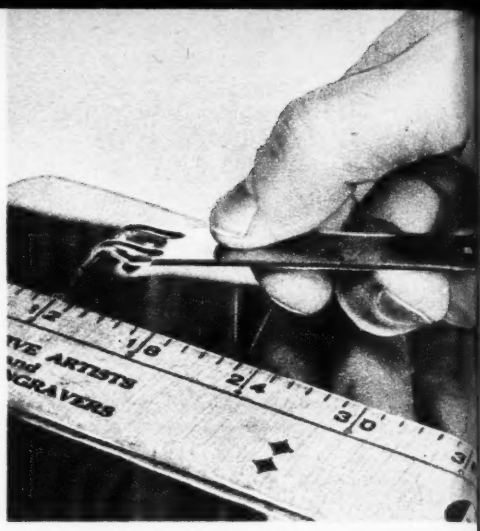
Begin by making the concrete slab from a 4:2:1 mix—that is, 4 parts of gravel, 2 of sharp, clean sand, and 1 of cement. When the slab is dry, begin the bricklaying operation. In building the firebox, don't forget to insert the 8 pieces of ¼x2x10-in. strap iron. You might want to add some extra ones that will enable you to vary the distance from the flame to the grate.

The righthand bin is for fuel storage. If desired, cover this area with brick, but the slate is sufficient. •





Adhesive tape wrapped around jaws of your wrench will protect finish on polished or chromium-plated nuts and bolts. This also prevents chewing up plumbing fittings when replacing washers or cap nuts.

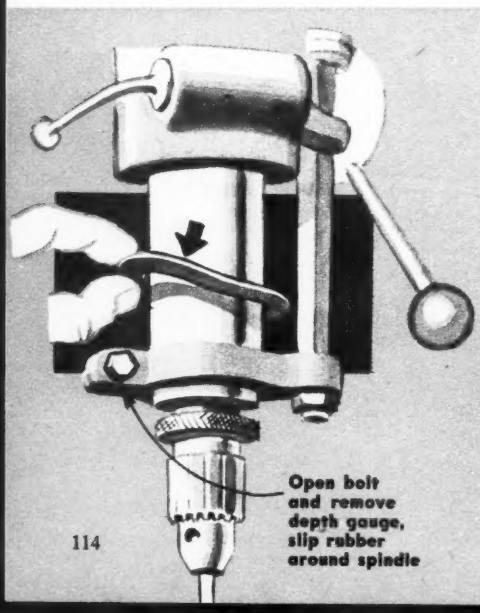


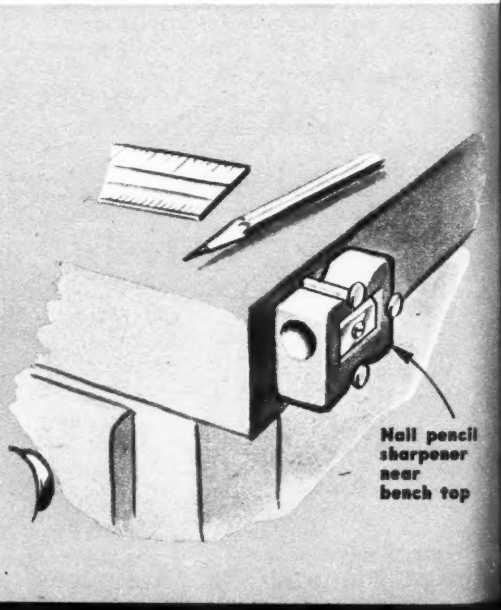
Versatile beer can opener deserves a spot in any shop. Here it's used as a metal scriber. It's also handy for prying lids off paint containers, and can double as a center punch on woodworking projects.

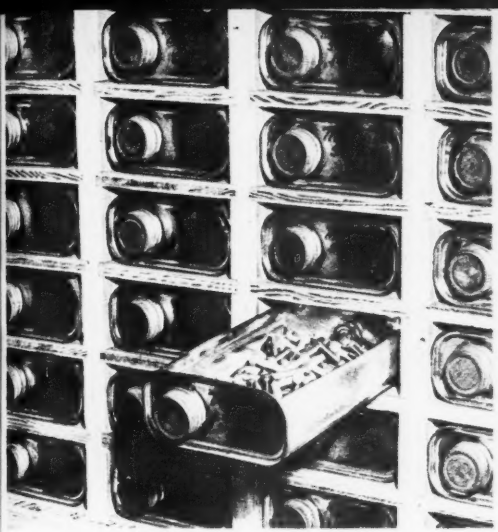
Shop Tips

To absorb the shock of a drill press spindle as it strikes the housing after pressure is released, an ordinary fruit-jar rubber should be slipped around the spindle carrier. Remove the depth gauge to insert.

There's no such thing as too many pencils in a shop. You'll find it convenient to attach a sharpener of the type shown to the side of your workbench. Fasten with nails or a bracket made of 1-in. strap iron.



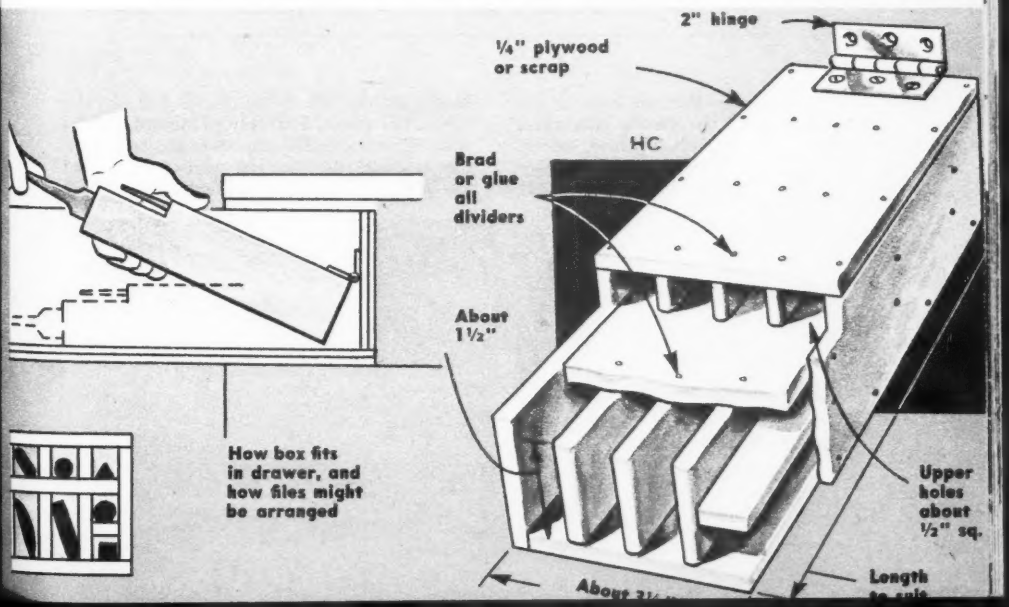




If you have a supply of old auto polish or cleaning fluid cans, you can transform them into an excellent hardware filing cabinet. Cut out one side, bend the edges, and construct shelves as indicated above.

For roughly rounding square stock, rig up this fixture. Clamp a piece of scrap at one end of your vise so that it protrudes above jaws. With a few degrees rotations between strokes, you'll get good results.

Hinged holder for files and rasps fits into one of your workbench drawers, protects the tools from banging against each other. Construct the unit from scrap lumber or plywood to fit your own needs, and mount. When you need a file, merely raise the holder, choose the required tool, and set holder down to its position on the drawer bottom.



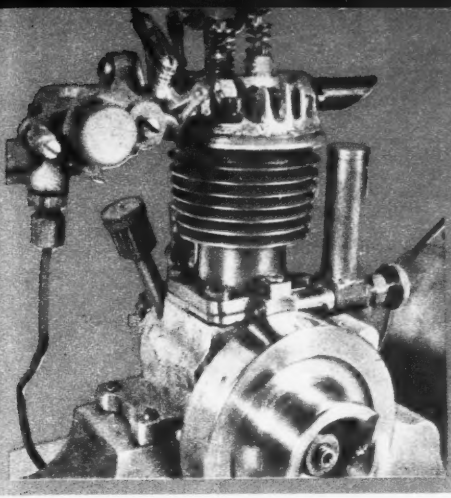
Scale model Jeep, 4/7 actual size, was built by Dr. J. A. Smith, Jr., of New Smyrna Beach, Fla., for his two boys. Power is supplied by a 1½-hp engine with 6 to 1 gear reduction. The front suspension is provided by two coil springs.

mi WORKBENCH AWARD WINNERS

Each craftsman whose project is shown here receives a $5 check and a Workbench Award Certificate. How about sending us a photo and description of your latest project? If you aren't a winner, you may still receive a Certificate Of Merit. Photographs of your workshop are also eligible for an award. Send entries to MECHANIX ILLUSTRATED Workbench Awards, 67 West 44th Street, New York 36, New York.

Junior Miss Joan Vernier does a bit of housecleaning in the brick playhouse built by her dad, Joseph Vernier, of St. Clair Shores, Mich. He managed to incorporate an outdoor fireplace along one wall.

Baby Blue, MI Plan No. B-183, is the project of Jason Petroelje, Holland, Mich., who added a deck and steering wheel to the original design. He writes, "I found the plans complete and easy to follow."



Prize-winner in the Ohio Industrial Arts Association was this 1-hp gas engine built by 17-year-old Edward Ubreich, Hamilton, Ohio. Ed cast head, crankcase, motor mount and base. Height: 17½ in.

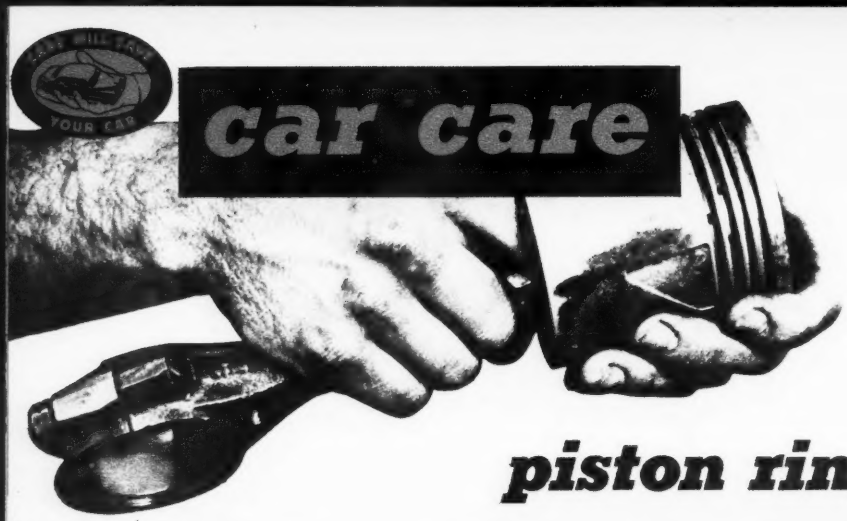
Enlarger cost Francis Richard of Rogersville, N.B., Canada, $3.50 to construct. The bulb housing was made by soldering two tin cans end to end. Unit uses interchangeable lenses of 3 or 5-in. diameters.

David Porter, Jefferson, Ohio, poses in the racer car which he built with assistance from his dad. Power plant is a 2-hp Briggs and Stratton engine. Dave can practice on his own track, 1/20 mile long.

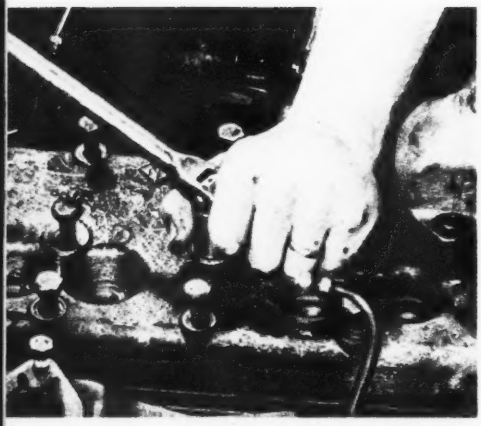
Wading pool featured in the July 1950 MI was assembled by Henry Clark of Dumont, N. J., who maintains that this project is a surefire way of achieving popularity in any neighborhood. Pool holds 8 kids.

Radio console is the handiwork of Dr. Edmund W. Swapp, Portland, Ore. Top and sides are birch plywood; corner posts are solid mahogany topped with myrtle.

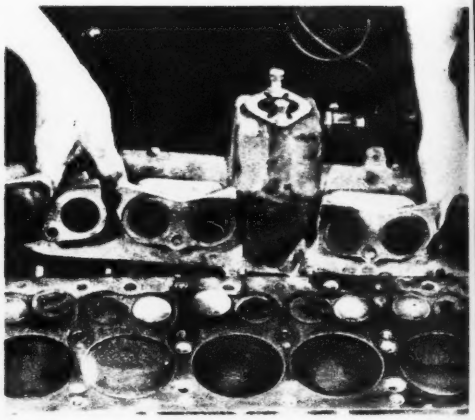
car care



piston rings



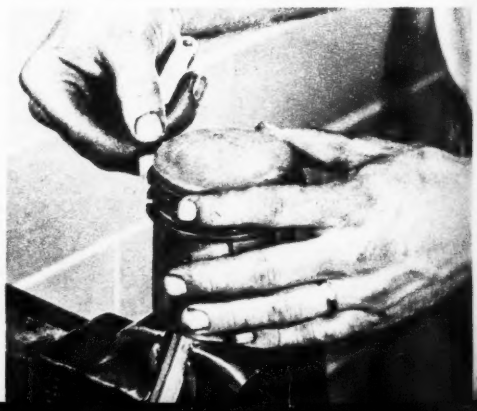
The first step in a ring job is to remove the cylinder head. But, do it when the head is cold, otherwise it may warp and spoil your work.



While you have the head off, you may as well clean out the intake and exhaust manifolds. Dirty intake manifold causes uneven fuel distribution.

Before scraping the carbon, wrap the connecting rod with a rag and clamp it in a vise so that the bottom of the piston rests on the vise jaw.

The side clearance of the rings in their grooves should be checked with a feeler gauge. Minimum clearance for a new compression ring is .0015 in.



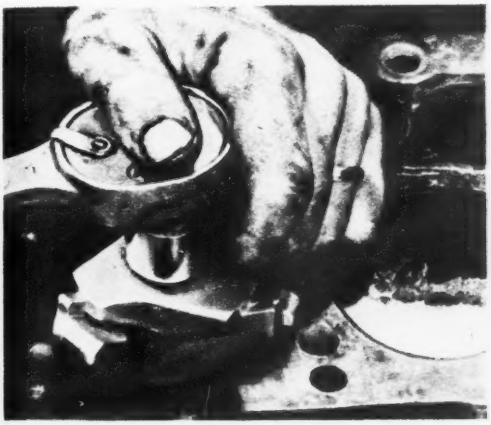
By Frederick C. Russell

THREE little words that pick up the worried motorist and knock him down at the same time are the mechanic's diagnosis, "You need rings." It always means another trip through the wringer for the pocketbook, but at the same time there is the bright prospect of new life for the ailing motor. Without some wise guidance or specific know-how, however, the bright prospect may fizzle out like a wet firecracker.

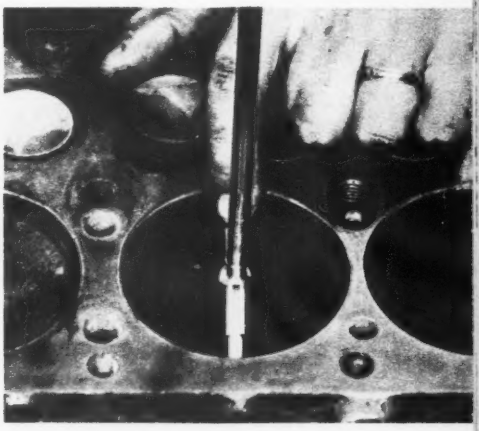
So tie some rings of string on your fingers and you'll have a better chance of bells on your toes to help celebrate a return of power and economy to the sluggish motor. There are ten special things to keep carefully in mind when a ring job looms on the horizon. Overlooking any one of them may toss the whole project out the window.

Like a friend of mine who jumped to the conclusion that a ring job was indicated because a compression test showed one cylinder some 45 pounds lower than the others. He failed to extend the test to cover the valves, one of which was badly warped. Or take the case of the fellow who thought that because the engine was quite peppy no re-ringing was required. A sloppy engine often gives a very wrong impression when it isn't being asked to show its true state of health by pulling a hill slowly in high or giving good gas mileage.

Jumping along to our third string we have to face the fact that many times we find ourselves foolishly trying to make round rings fit bores that have worn "square." Many tricks have been tried with rings, and the snake type ring certainly



The metal ridge which forms at the top of the cylinder wall must be removed with a ridge reamer before any attempt is made to remove the pistons.



Whether the cylinders need reboring, or new sleeves (if your car can take sleeves) depends upon the extent of taper and out-of-round shown by mike.

A special ring plier is required to remove the rings from the pistons. If you try to twist them off you may chip or scratch the piston wall.

A broken ring with a squared end makes a good tool for removing carbon. Leave carbon at top of the upper groove to insulate the ring from heat.

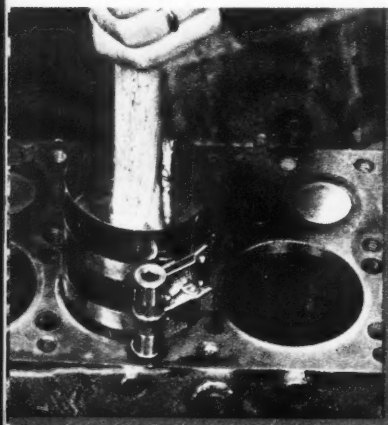
Photos courtesy Perfect Circle Corp.

opens up new possibilities. However, we have to bear in mind that where bores are worn out of round there is also taper wear to be considered. So if new sleeves cannot be used in the cylinders a rebore looms on the horizon. Before resorting to this, however, it is important to take the engine's general condition into account. It may not be practical to rebore an engine that has a marked tendency to overheat or if the general condition of the rest of the car doesn't warrant it.

I've watched ring jobs since "way back" and another reminder which I think ought to be stressed is the fact that no rings are any better than the skill of the person who installs them. It is all right to check into the advantages of different types of rings, but don't lose sight of the fact that the whole job can be ruined by failure to consider ring groove wear or by not re-sizing the pistons or not staggering the ring end gaps.

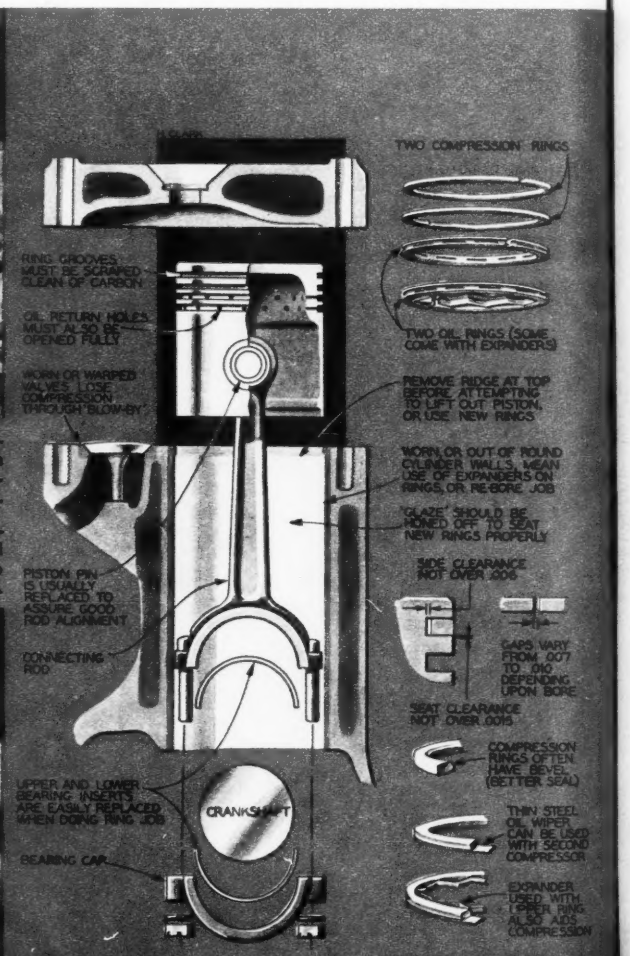
Fifth reminder is the likelihood that the engine will require more than new rings. Valves will need grinding, several possibly needing replacing. There's a good chance that the connecting rod inserts will need replacing, wear here being a major cause of poor oil mileage. To skip over anything that shows up on the debit side is merely throwing good money away. New rings alone may be like changing your distance "specs" without checking to see if your reading glasses are still acceptable.

The other five reminders have to do with the interesting business of replacing the rings, but before [*Continued on page* 142]



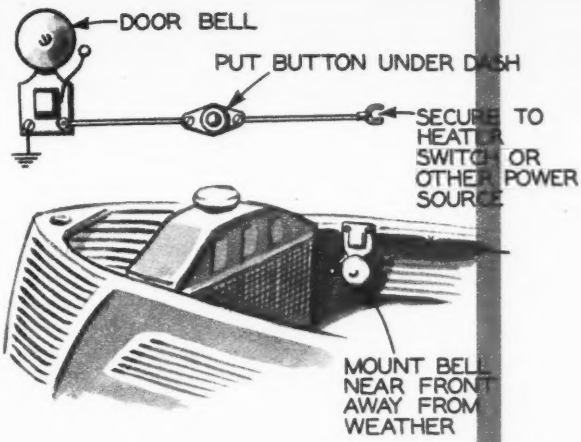
A ring compressor is a must for installing pistons after new rings have been inserted. Ring plier, used for removing rings, is also used to install them.

Follow implicitly the manufacturer's instructions when taking up the head nuts or studs. If possible use a torque wrench to prevent overtightening.

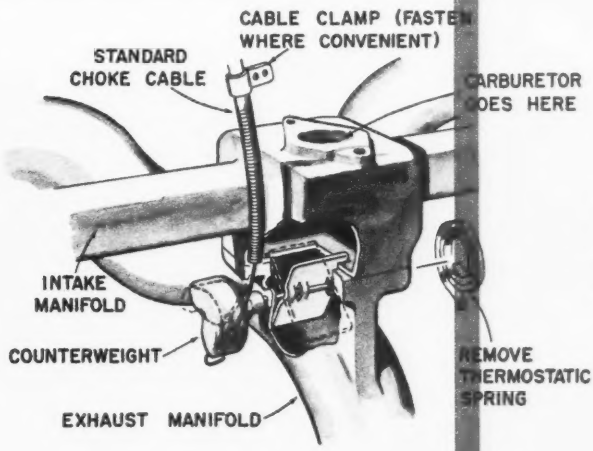


Cross-section of typical piston assembly

Auto Aids



Pedestrians will often heed an ordinary doorbell when a persistent horn fails to do the trick. One bell terminal is grounded to the car frame, while the other is wired to a push button attached to the underside of your dashboard.



A choke cable mounted beneath dashboard controls heat riser action, cuts down on fuel costs (see text below). Cutaway sketch at left shows method of installation. In photo below, riser is open.

Control of the manifold heat riser will help you save fuel. Many cars have faulty riser action. The units either stick in the open or closed position, or the spring action is stiff. As a result, the gas mixture becomes overheated.

By installing a choke cable under the dash and running it down to the counterweight on the riser, the operator has constant control over the action. Keep the riser closed when starting and until normal running temperature is reached. Then open it—and it stays open.

Your mileage and power should increase noticeably. Winter warm-ups are cut to a minimum, and in the summer you have fingertip control for preventing overheating of the manifold.

Looking at the tracks in the sand, it is hard to believe that they have been made by a model, and not by a full-size Army vehicle.

By Herb Lozier

MODEL HALF-TRACK

AN excellent model that adapts itself easily to electric drive is this beautifully detailed model half-track scout car. It is a plastic job available in any five and dime store. The car contains ample room for motor and battery. By cutting away a small portion of the front axle holders, a simple effective steering arrangement can be put in place of the fixed axle. The front of the car is equipped with a rubber-covered roller that acts as a bumper to prevent scratching furniture. Motive power is a battery-powered miniature electric motor. Car is shaft-driven through HO locomotive gears. A push button lamp switch is used to stop and start the motor. The model is a simply constructed straightforward job that can be built on the kitchen table. For the gear drive remember that a low gear ratio will allow the model to climb better and have more power, but move slower. A high ratio will let the model go faster, but with less power.

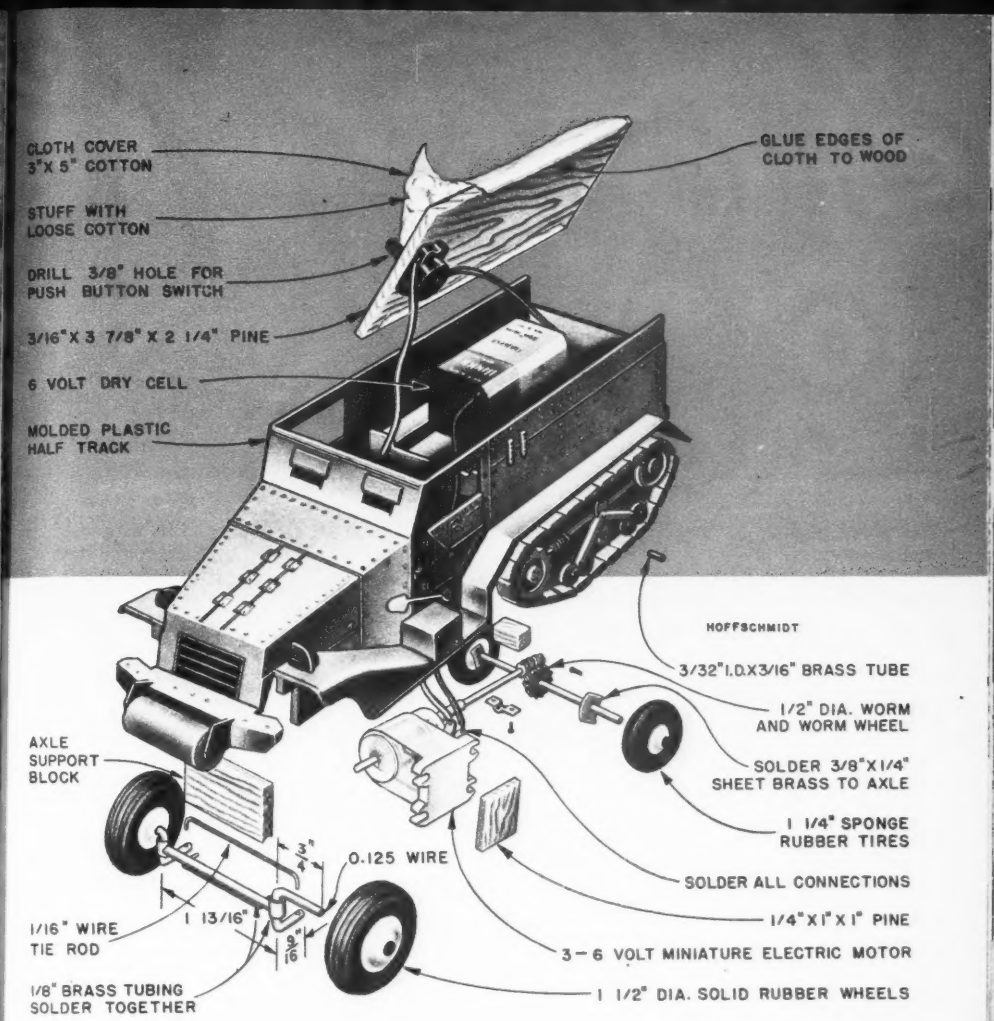
First of all remove the axles and the wheels. The front wheels will slip off easily as soon as the flattened axle ends are filed off. When you remove the rear wheels take care not to break the plastic dummy half-tracks. Best idea is to cut the axle in half with a jeweler's saw. *Do not* use metal clippers.

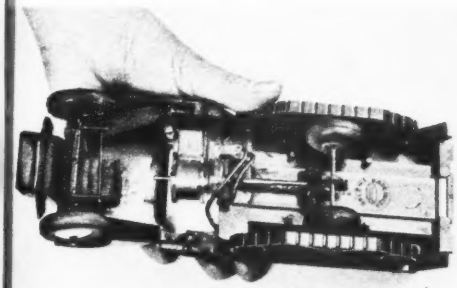
The front axle support is made of pine wood cut to the size and shape shown on the drawing. Before you put the front axle support in the car make up the front axle and steering knuckles as shown. Use the original front axle and a length of brass tubing to join the stub axles together. Make sure the knuckles are at right angles to the axle. Next bend a length of brass rods to shape as shown for the turning stop. This prevents the wheels from rubbing against the car while it is going in a circle.

When the tie rod is made, insert the ends into the holes in the stub axles as shown. Slip on the front wheels and see that they point directly forward. If not, carefully bend the tie rod until they do. Then place a drop of solder on the end of the tie rod to prevent it from slipping out of the holes.

Place the motor in the car so that the long round end fits into the cutaway portion of the floor. Slip the drive shaft on to the motor. Be sure the worm gear is between the axle gear and the floor of the car.

The axle gear should touch the worm at its center or close to it. Both gears should *just mesh*. Remember that the gears *must not* be forced together or they will bind. The wood block supports the drive shaft bearing and keeps the shaft at the proper height. [*Continued on page* 146]

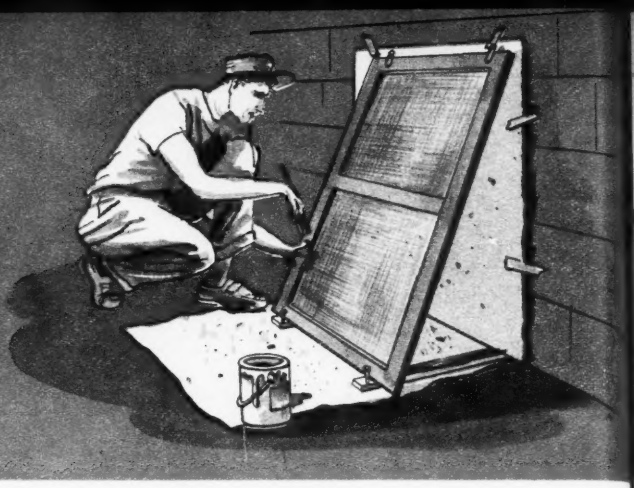




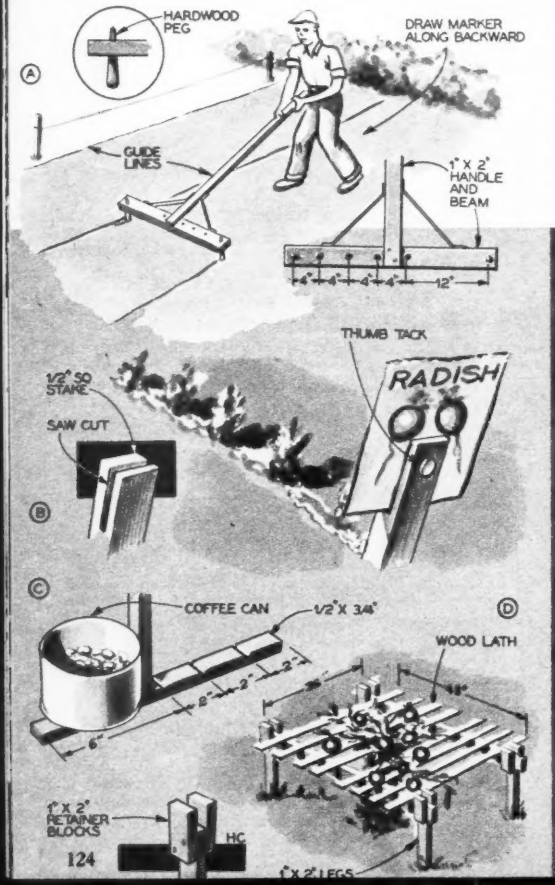
Car is driven by miniature electric motor powered by 6-volt A battery. Bevel gear on end of shaft drives rear axle. Tracks are stationary.

Battery is located in body of truck. On-off switch is operated by pressing down on the white duck top. Rubber bumper in front protects furniture.

home hints

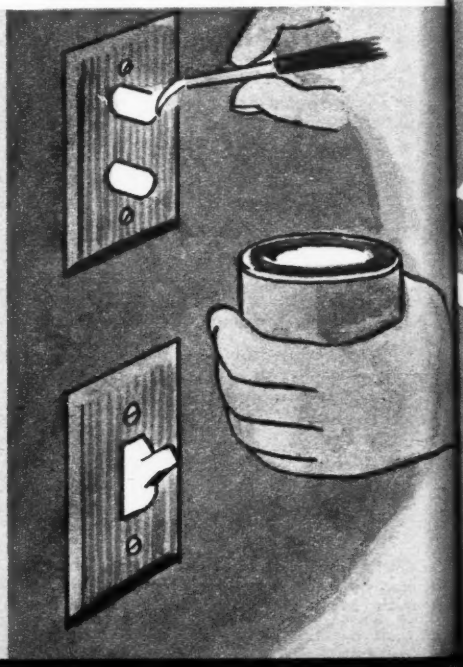


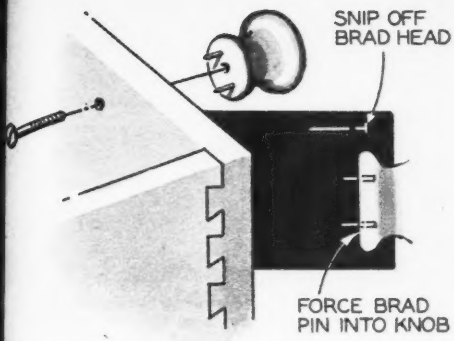
Garden aids. A. Simple marker evenly spaces rows for planting. B. Seed packets won't blow away when tacked to slots in stakes. C. This tool acts as a rule and seed carrier. D. Your tomatoes will thrive on lath platforms better than on the usual stakes.

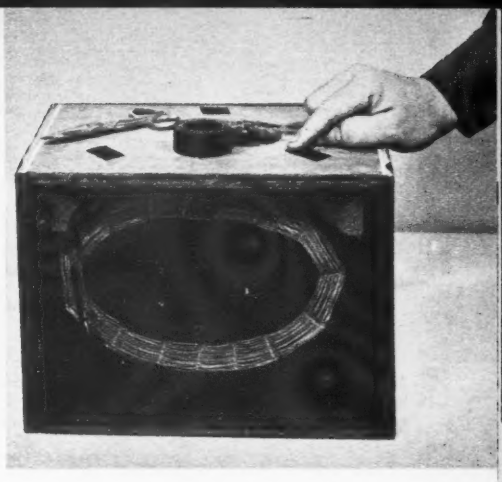


Screen painting can be simplified by doing one side of the screen and then going over the other with a dry brush. Enough paint will have seeped through to do the second side. This will keep the screen's openings from clogging up.

Luminous paint on push buttons and switches will make them easier to find in the darkness. This will avoid stumbling over furniture and marring the walls when looking for switches at night. One coat of paint will do the job.





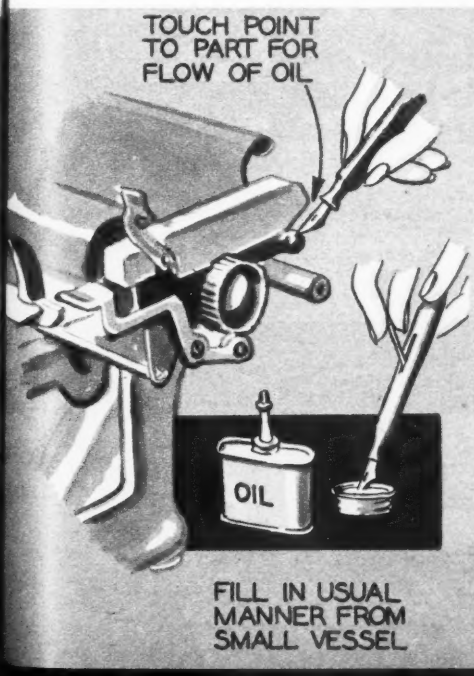


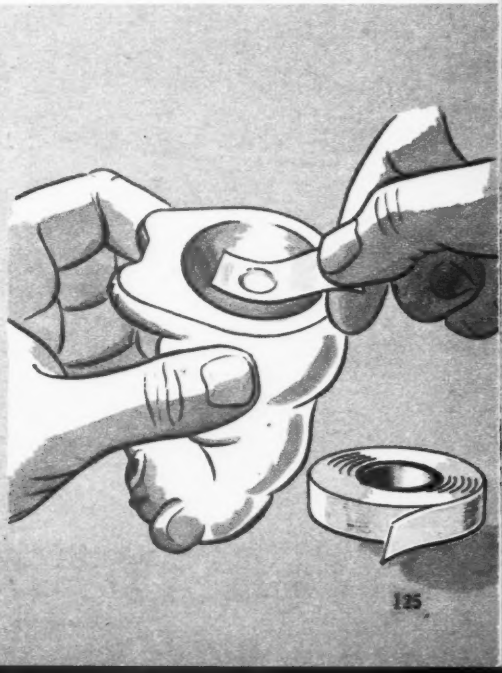
Wooden knobs stay put with this simple method. Nip off the ends of wire brads so that only about ⅛ in. protrudes after they have been driven into the knob. If the piece is made of hardwood, 1/16 in. is long enough to hold it firmly in place.

Friction tape, pressed firmly over the chassis mounting screws of AC-DC radio sets will prevent the sets from shorting if they are placed on a grounded object such as a radiator. This is so because AC-DC sets use the chassis as a common ground.

Fountain pens make handy oilers for any fine machinery such as typewriters, cash registers or clocks. The pen is filled with light oil and the nib is applied to the bearing or part that is to be oiled. Slight pressure controls flow of oil from the nib.

Salt and pepper shaker stoppers seem to have a habit of getting lost. If this happens to yours, don't throw the set out. All you have to do when you fill the shakers is to cover the opening with a piece of cellophane tape a bit larger than the hole.



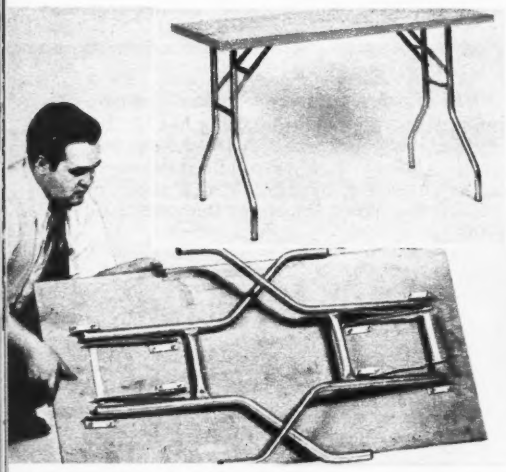


Screwdriver has shank which accepts detachable bits for nut running or driving Phillips-type screws. Continental Screw Co., New Bedford, Mass.

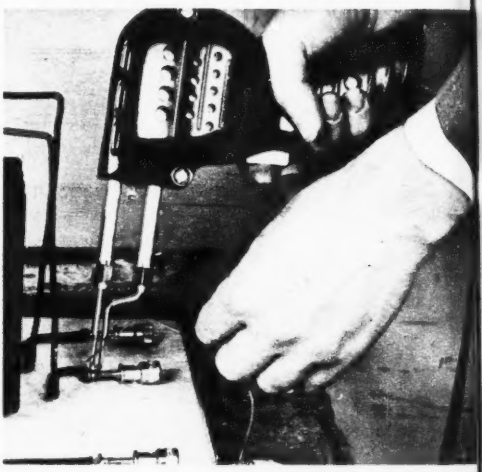
Plastic bolt and nut gauge made by the Sorrell Mfg. Co. of Lakewood, O., indicates size of bolt and whether matching nut has SAE or USS thread.

NEW for the SHOP

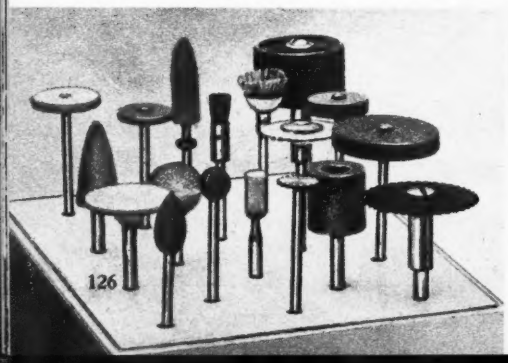
All you need is a length of plywood and a pair of these new folding steel legs to make up a table in a jiffy. Sold by Institutional Sales Co., Philadelphia.



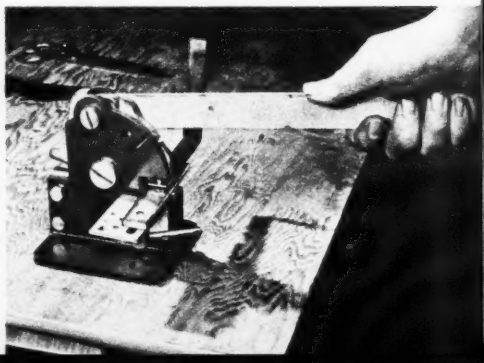
Iron made by Wen Co. of Chicago produces soldering temperature in 5 seconds by means of transformer in handle. Built-in light illuminates work.



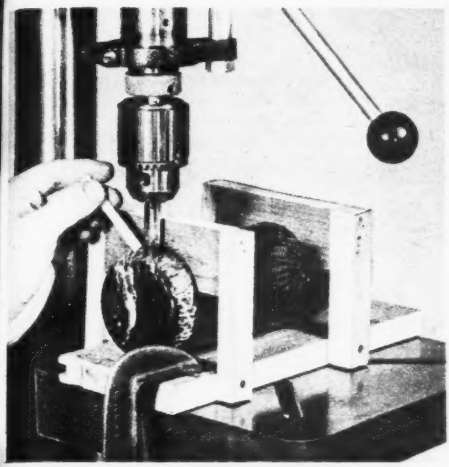
A set of 112 accessories on ⅛ in. mandrels for use with electric hand drills is available as a package from Schupack Supply Co. of Chicago.



New shop tool, shears, punches, rivets and forms. Will punch up to ¼ in. holes in 1/16 in. hard metal. Made by Albert Tatu, Williamsville, N. Y.



drilling holes in glass



Special jig is clamped to drill press table. Abrasive powder mixed with turpentine is kept under the drill with wooden splint. Drill is merely a piece of copper tubing of desired hole diameter.

FOR the owner of any ordinary drill press, drilling glass is almost as easy as drilling brass. You have to discard any preconceived notions, such as I had, that it takes special equipment or skill. You only have to observe a few common-sense rules that apply to the handling of glassware under any circumstances: don't drop it and don't hit it with sharp instruments.

Specially-shaped twist drills, ground-down files, and abrasive pastes are the means of drilling usually recommended. Grinding special cutters, I found, was tricky and time-consuming. The abrasive powder method turned out to be utterly simple and reliable.

You can buy abrasive powder, actually silicon carbide, in hardware, automobile and optical supply stores. It should be fairly coarse, about 100 or 120 grit. A pound can will last years. The stuff is much harder than glass, so it will scratch and cut the latter. The trick is to apply it evenly to the [*Continued on page* 147]

Clean and simple, this completed "antique" lamp looks especially neat because of the aperture for cord.

Use a block of scrap to protect your work when assembling doweled joints. Be sure to wipe off all excess glue before it can dry.

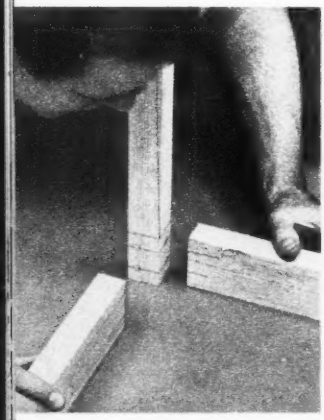
Butler's Table

Simplify service by building this Early American classic.

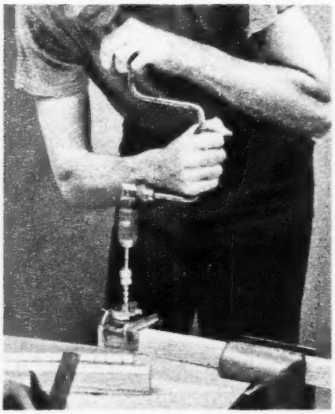
By Harold D. Mack, Jr.

ANTIQUE reproductions are enjoying great popularity nowadays, but even some copies are high priced. Following this plan, you can build a handsome, mellow-pine coffee table for about $10. The tray itself may be made removable by adding cleats to its underside, lining them up inside the frame top. The major expense will probably be for the spring-loaded hinges, which may be obtained at any specialty hardware shop.

The unit shown here was made entirely

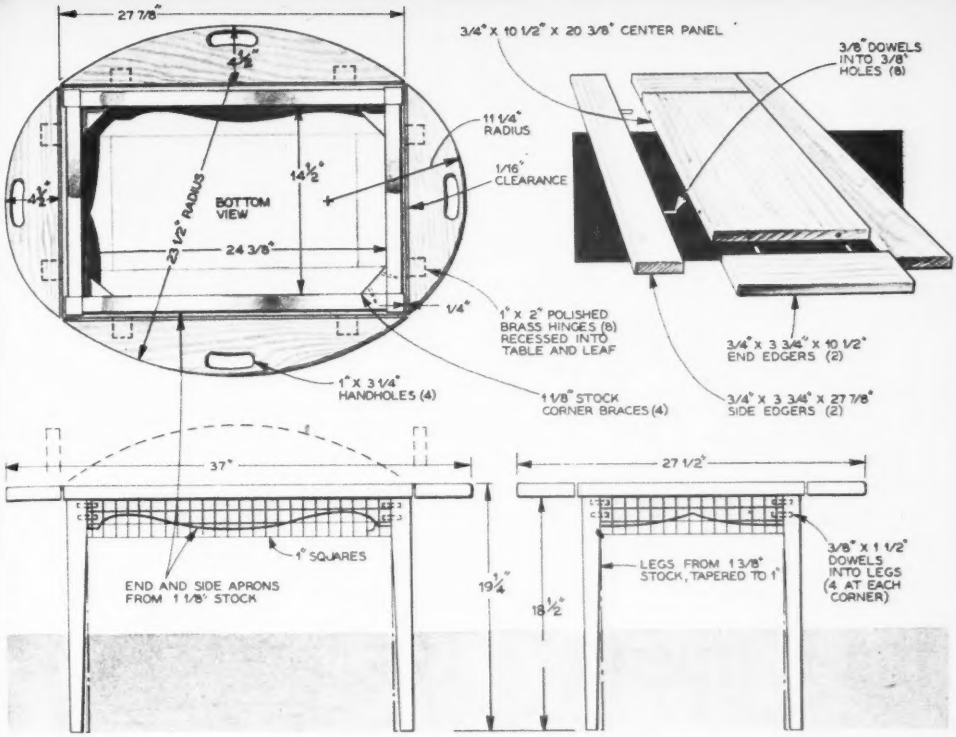


After tapering legs and cutting aprons, place as shown to mark position of dowels.



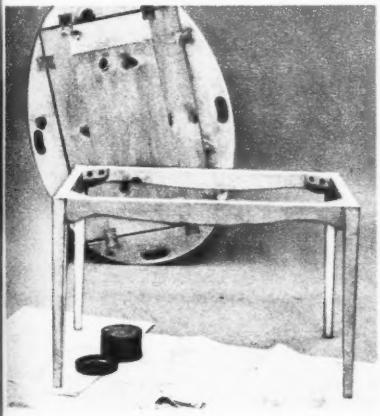
A doweling jig will assure accurately placed holes if you don't own a drill press.

After marking off recesses for the spring-loaded hinges, carefully chisel out areas.

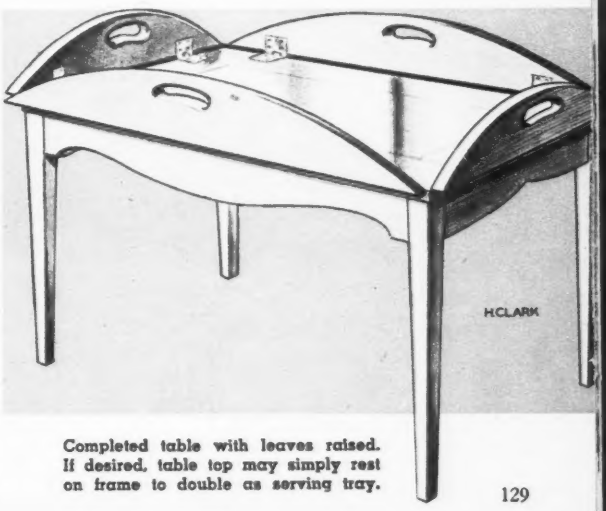


by hand, but any power tools you may own will of course cut down the work considerably. First of all, cut and glue the pieces for the top, then cut the legs from four pieces of 18½x1 ⅜-in.-square material. Taper as indicated in the above sketch.

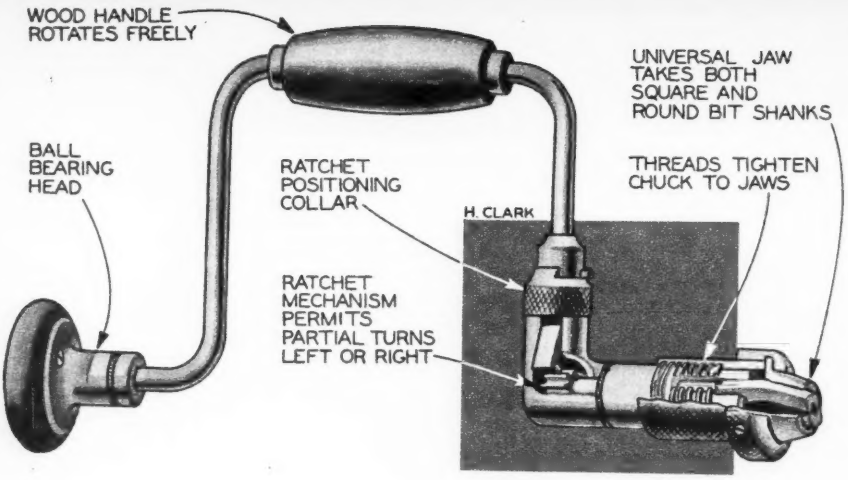
The aprons and leaves are next. In the absence of a scroll saw, a keyhole saw will serve for cutting the handholes. For doweling the various joints by hand, you will find a Stanley doweling jig indispensable in helping you to [*Continued on page* 143]



You may find it easier to stain or finish the table before final assembly. Paste wax was used on this unit.



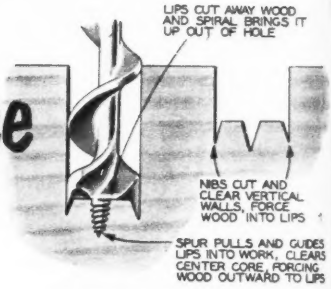
Completed table with leaves raised. If desired, table top may simply rest on frame to double as serving tray.



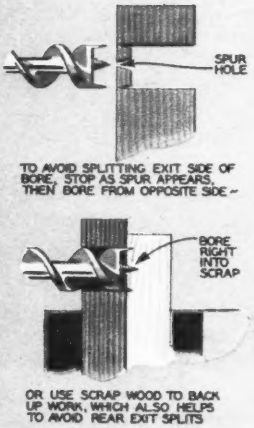
STANDARD BRACE WITH RATCHET CHUCK

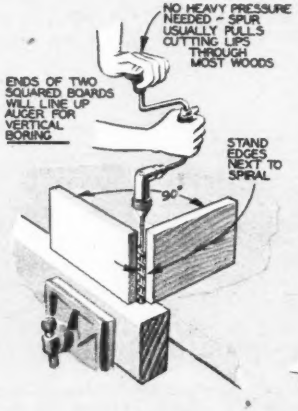
The Carpenter's Brace

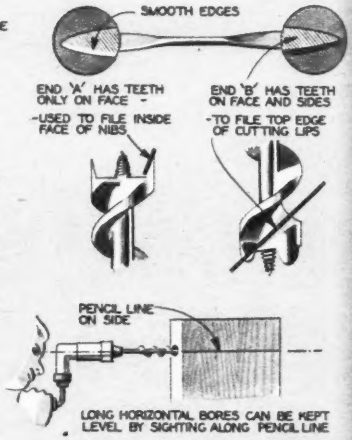
Add a new twist to your knowledge of hand tools by learning the applications of the versatile, labor-saving brace.



CUTTING PRINCIPLE OF AUGER BIT







THE brace is a simple, rugged, foolproof hand tool of great usefulness. Its primary job is to bore large holes in wood. Whereas the usual hand drill or portable power drill can accommodate round-shank twist drills up to ¼ in. or 5/16 in., the brace takes square-tang auger bits starting with these sizes and running up 1½ in., in steps of $\frac{1}{16}$ in. Expansive bits and circle cutters, which have adjustable lips, extend the boring range to as much as eight inches.

Braces are classified according to their sweep, which is the diameter of the circle made by the handle as it is turned. Manufacturers' catalogs list 6, 8, 10, 12 and 14-in. braces, but the most commonly used size is the 10 in.-unit. The actual depth of the U-shaped center section of this brace is 5 in., representing the radius of the 10-in. sweep.

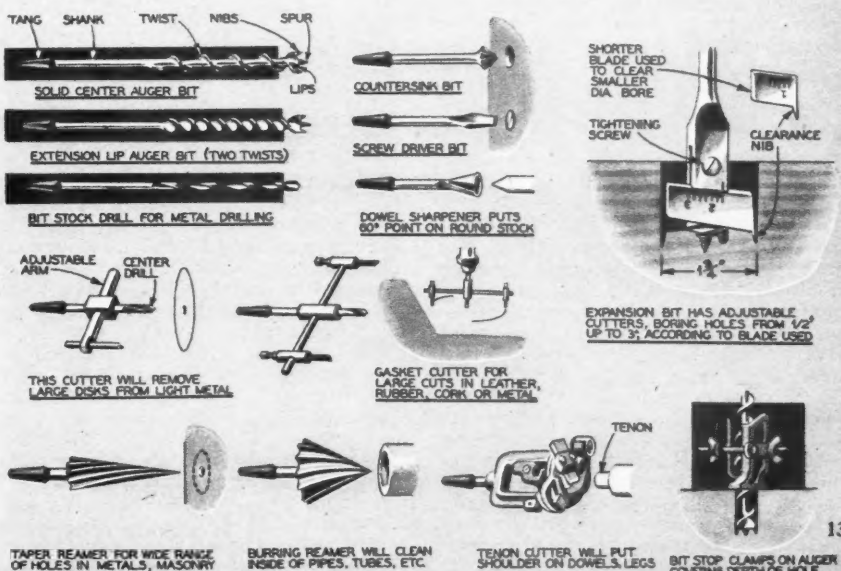
The offset handle gives the brace powerful leverage and enables even the largest bits to chew deep holes in the work. Because their square tangs are solidly gripped by two split jaws in the chuck, the bits themselves cannot possibly slip.

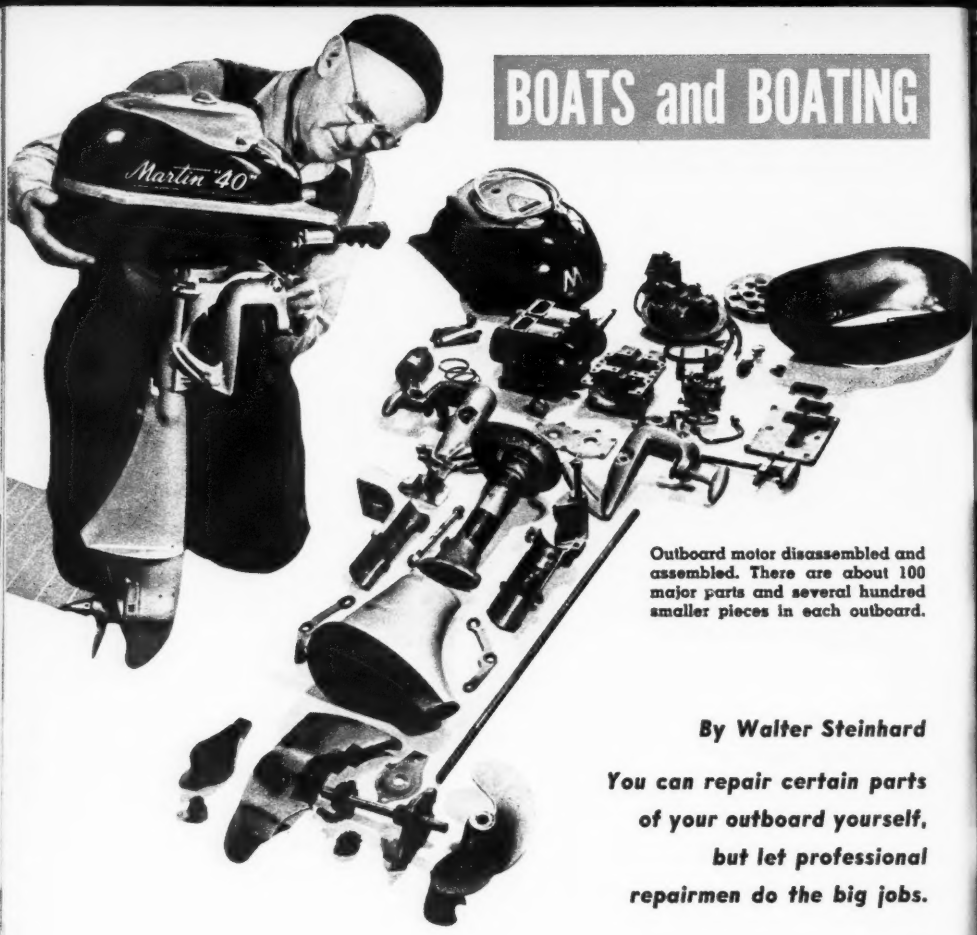
Any respectable brace has a ratchet mechanism built into the chuck end. In its center or neutral position, the ratchet locks the chuck to the turning arm, and you must therefore move the latter through complete circles when boring a hole. However, with the ratchet set to the right, you can swing the brace through any arc of a circle, thus forcing the bit partially into the wood; you can back off without causing the chuck and bit to turn, and then swing the brace through the same arc for another partial cut. For working in tight corners where there isn't room for the full swing of the brace, this ratchet control is indispensable. The ratchet can also be set to the left, for reverse action.

For making holes in metal, you can use bit stock drills in a brace. These are twist drills with tapered square tangs just like the ones on auger bits. Avoid the small sizes, from about $\frac{3}{16}$ in. down, because they tend to break off at the shanks when the brace is twisted unevenly. For holes up to and including ¼ in., you can do a faster and more accurate job with a hand or power drill. If you need to make a larger opening in metal, first make a $\frac{3}{16}$ or ¼ in.-hole with either of the latter tools, and then bore it out with a bit stock drill of the desired diameter, or with a reamer.

For the usual run of metal work around the home and in a small shop, you will generally find reamers quicker and cleaner than bit stock drills and much more flexible in that they make holes of any intermediate diameters. Three standard reamers will cover a wide variety of requirements: ⅛ to ½ in., ¼ to ⅞ in., and ¼ to 2 in. Because of their long cutting flutes, these reamers bite away iron, brass, aluminum, etc., at a fast rate.

One of the most useful accessories for the brace is the screwdriver bit. With it you can speed up the driving of both wood and machine screws, and also remove frozen screws [*Continued on page* 147]





Outboard motor disassembled and assembled. There are about 100 major parts and several hundred smaller pieces in each outboard.

By Walter Steinhard

You can repair certain parts of your outboard yourself, but let professional repairmen do the big jobs.

motor maintenance

ANY outboard motor will perform well if you treat it with understanding. Although you may be a fairly good automobile mechanic, don't let that make you think you can do a major job on an outboard. In spite of the basic similarity between car engines and outboards, there are differences in assembly and in fitting certain parts. Unless you are a really qualified outboard repairman, play safe by leaving the inside of your motor strictly alone.

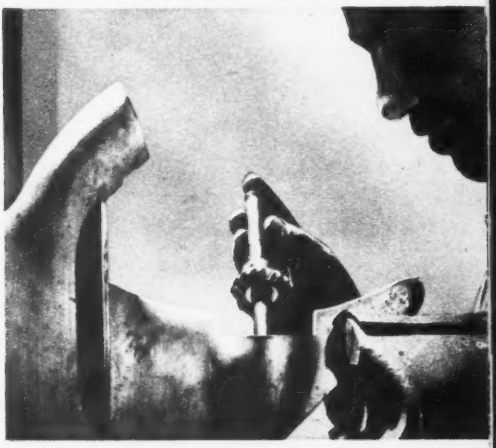
Don't attempt to fuss with the stator plate—the coil lugs on it are easily damaged and its components must be lined up with special precision tools. Leave the flywheel alone—a repairman uses a special puller to remove this part; if you try to force yours off without a puller, you may damage it. When you suspect ignition trouble, have the entire system checked on test instruments in a shop—this is inexpensive and is the only sure way to find out what the trouble is. Never sandblast outboard-motor spark plugs—unlike automotive plugs, they have electrodes that are easily damaged by blasting.

The first part of the accompanying picture story shows maintenance and repair jobs that are best left to professional repairmen who have the tools, instruments, and knowledge required. The second half depicts work that you can do yourself to keep your motor in tiptop condition. •

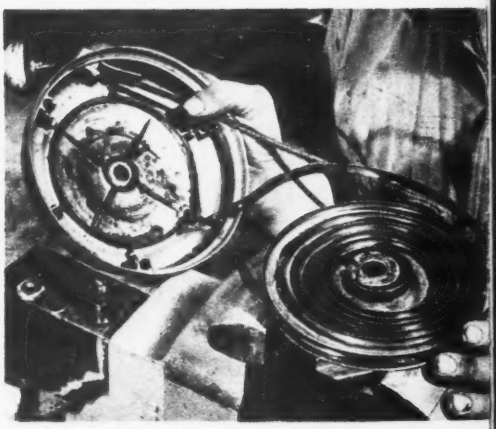
Typical small repair shop. Here, Otto Witt of Bayside, Long Island, employs ordinary tools and specialized know-how to keep outboards in shape.

Even so-called corrosion-resistant alloys will deteriorate if not kept clean. Shown here is a severe case of preventable salt-water corrosion.

Testing the spark. Method shown is used with simultaneous-firing motors. In one-cylinder or alternate-firing jobs, hold wire near the block.

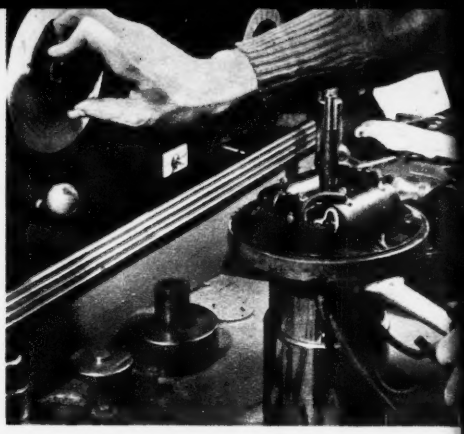


Inserting propeller-shaft gear in gear-housing shell after replacing gears damaged by lack of proper lubrication in the outboard's lower unit.



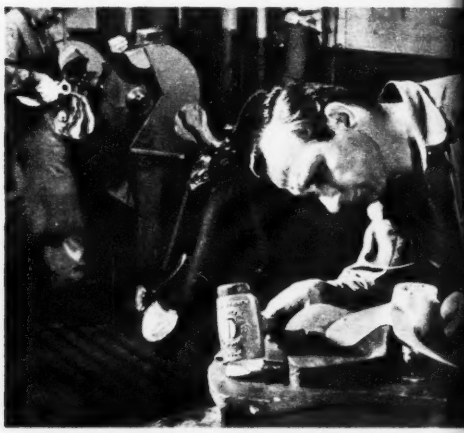
Modern recoil starter is rewound by a powerful coil spring. Most frequent cause of damage is yanking cord out too far, thus pulling it loose.

Removing points from a stator plate. At left, top to bottom, are a flywheel (which contains the motor's magneto), a condenser, and a set of points.

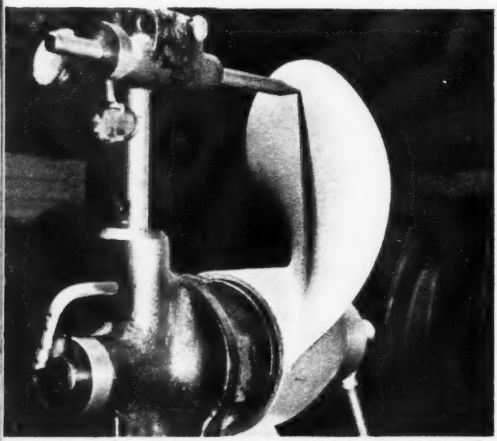


Coil-testing equipment of the type shown is not usually found in small shops. This photograph was taken at the Oluf Mikkelsen Co., New York.

Removing a worn connecting-rod bearing from an alternate-firing two-cylinder motor. Such work is too precise for the average nonprofessional.



Any prop damage requires professional attention. Here, a straightened blade is being checked on a factory-furnished die by a skilled specialist.



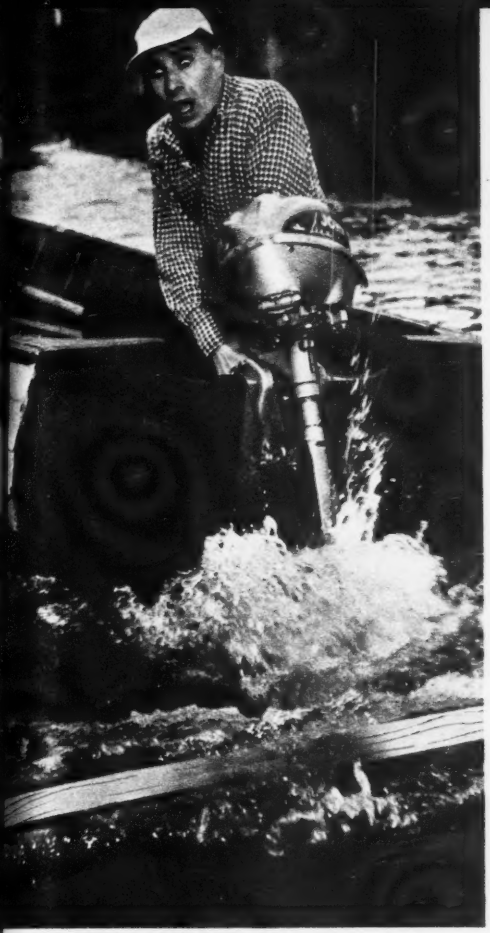
To insure symmetrical balance in a propeller, the alignment of each blade tip is tested by bringing it in contact with point on this jig.

After completing repair job, Mr. Witt tests the motor in his tank, adjusts the carburetor, and makes sure that there are no remaining troubles.

is not
graph
York.

tion.
d on
alist.

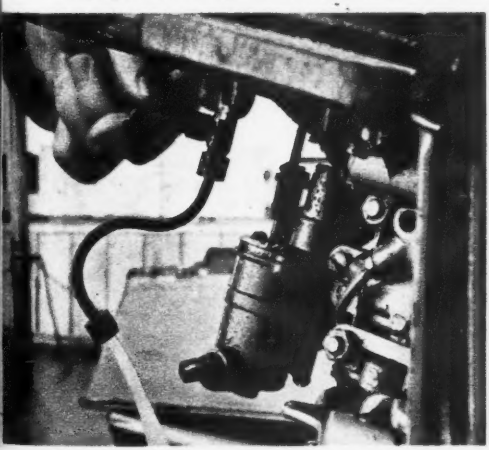
he
nd
es.



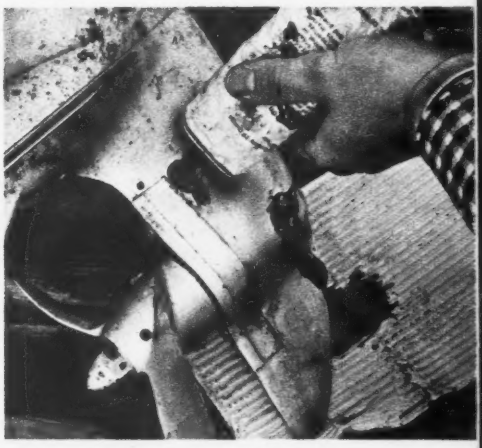
Amateur Maintenance. An unseen piece of driftwood can break a shear pin or even bend a propeller, so stay on the lookout for flotsam.

Maintenance kit should include funnel, starter cord, fire extinguisher, penetrating oil, plugs, shear pins, wrench, feelers, and a screwdriver.

When replacing a shear pin, don't hang over the transom, thus risking losing the pin and maybe yourself in the drink—swing the motor inboard.



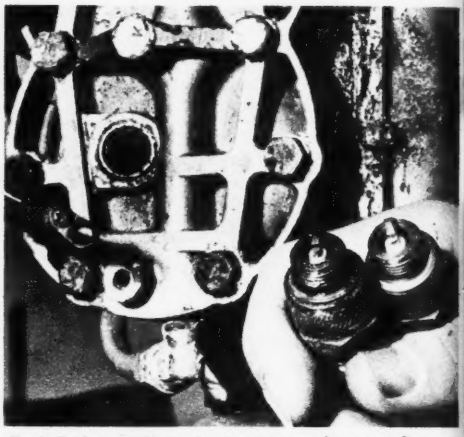
If you don't strain the fuel, dirt may clog the fuel line. To clear it, disconnect the line and let the gasoline run until you get a clear flow.



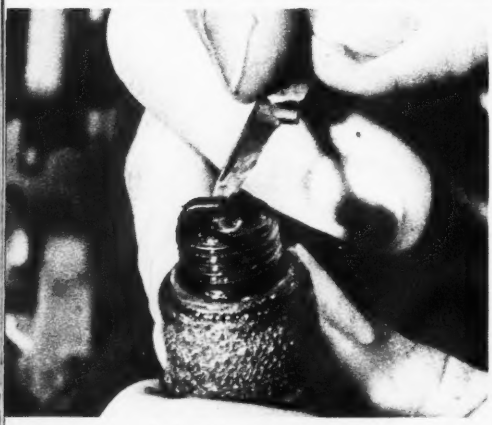
Propeller-gear lubrication is important. Check this several times a season, draining tired, thin grease off at bottom while refilling through upper hole.

To prevent corrosion, especially when motor is used in salt water, run it for a few minutes in barrel filled with fresh water, then wipe it off.

If starter should jam, do not attempt to force it. To get going again, remove starter housing and crank the motor with an old-fashioned starter cord.



Fouled plugs will cause motor to perform poorly. To check, remove plugs (using a wrench, never a pair of pliers) and compare with a clean plug.



Clean a fouled plug by wiping off the oil with a rag and scraping off carbon and deposits with a knife. Be sure not to lose the copper gasket.

Before putting a plug back in the motor, check the gap with a feeler gauge. The booklet that comes with the motor will specify proper gap.

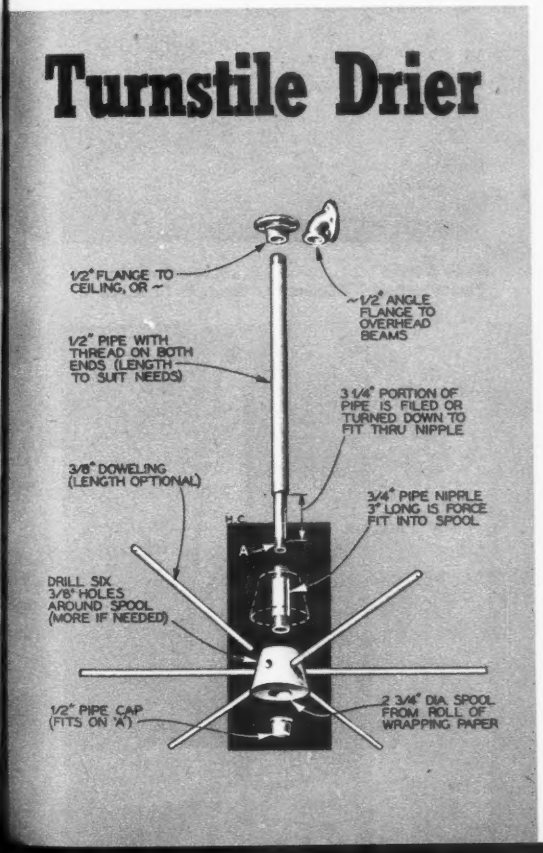
WHERE to hang the light wash on Monday when the line is loaded is always a problem. The problem is really an easy one and can be solved by building this turnstile drier.

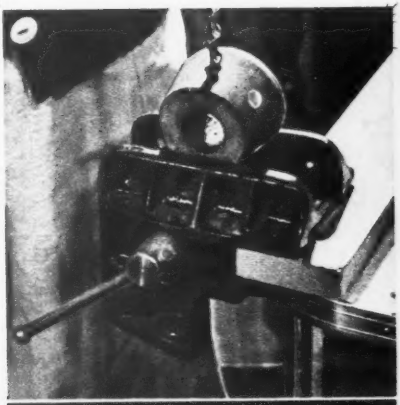
You will need some plumbing parts, a wooden spool from the inside of a roll of wrapping paper and some ⅜-in. dowel sticks.

The lower end of the ½-in. pipe must be filed or turned down on a lathe to allow it to fit into the ¾-in. pipe. Enough thread should be left to engage the ½-in. cap. By having a fairly loose fit, the drier can be revolved, thus making the clothes easy to reach. ●

—*Virgil Percy*

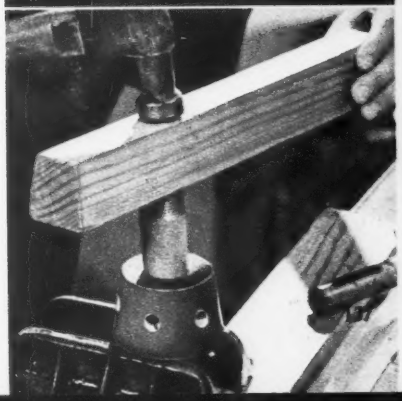
Turnstile Drier

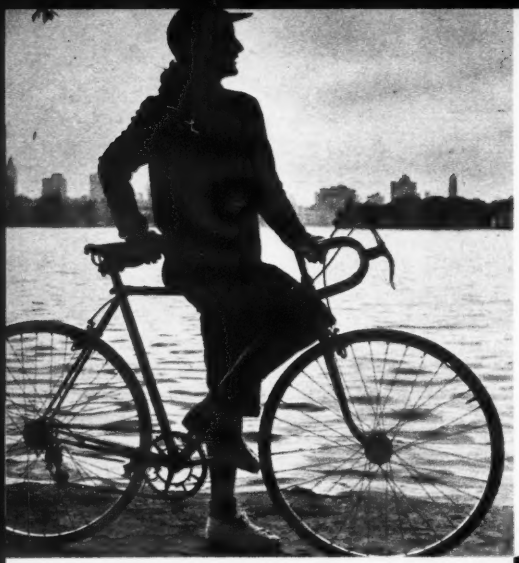




Six equally spaced ⅜-in. holes are drilled into a wrapping paper spool.

A pipe nipple is carefully forced into the center of the spool after drilling.





MONTHLY

PHOTO CONTEST

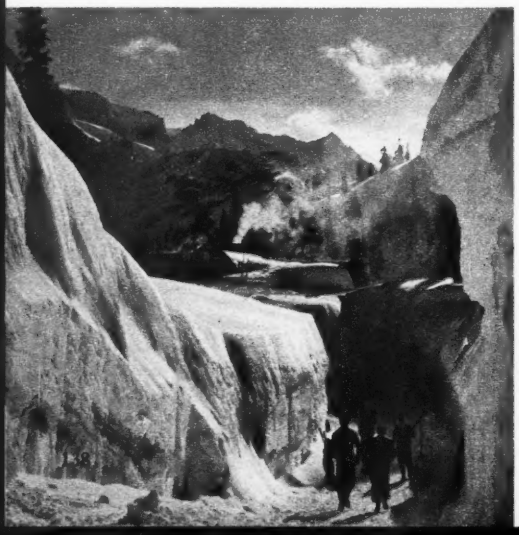
$5.00 Award .....Kitten Caper
Arthur Schoeni of Falls Church, Va., shot this kitten as it explored his blotter roll.

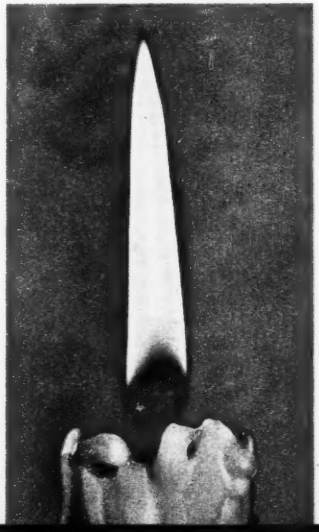
1st Prize ($10.00) .....Silhouette
Arthur Adams of Whittier, Cal., took this winner with his Rolleiflex on Super XX; f-11 at 1/100th.

Please put your name, address and picture-taking data on back of each print. Wrap with cardboard stiffeners and enclose a self-addressed stamped envelope or postage for return of unused photos. Prize-winning pictures are not returned. Judges are MI Editors. Duplicate prizes awarded in case of tie. Please address your entries to: Photo Contest, *Mechanix Illustrated*, 67 W. 44th St., N.Y.C. 36

$5.00 Award .....Skiers' Paradise
A 4x5 Speed Graphic was used by Glenn Dixon of Mount Vernon, Wash. Exposed at f-11 and 1/50th.

$5.00 Award .....Solarized Candle
Photographed by Tommy Graham of Tulsa, Okla.





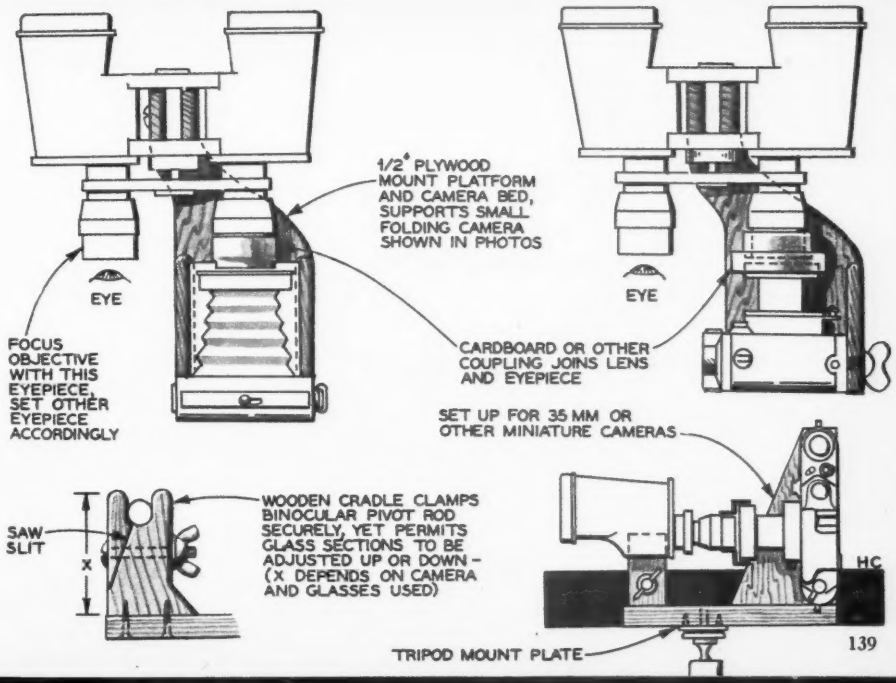
Pictures with Binoculars

By L. S. Barr

The subject is sighted and focused through one of the eyepieces and shot through the other.

IF you own a pair of binoculars, you can take pictures that rival those taken with expensive telephoto equipment. A comparatively simple set-up does the trick. A small piece of ¼-in. plywood with two clamps to hold the camera and binoculars forms the base. A metal plate tapped to fit the screw of the tripod should be fastened to the under side. It is necessary to make a sleeve that will fit the lens mounting of the camera and the eyepiece of the binocular to prevent the strong light from entering [*Continued on page* 147]

Both of these pictures were taken from the same spot with the same camera. The photo on the right shows the telephoto effect obtained by using the binoculars.



The author demonstrates how one sheet of paper is obtained by moving the paper safe's front door.

Automatic Paper Safe

A darkroom necessity which feeds one sheet of paper at a time.

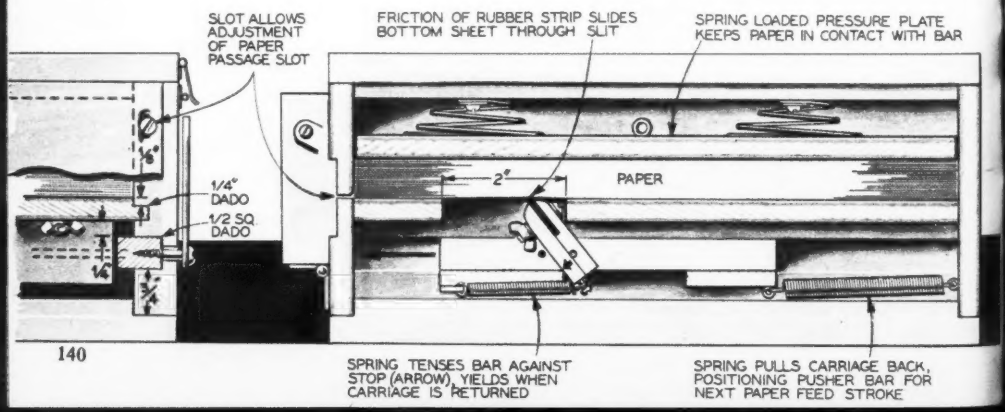
WHAT can be sweeter to a busy photographer than having a paper safe which automatically hands him a single sheet of paper each time it is opened? Such a dream can be realized by building this automatic paper dispenser.

Designed to hold about 50 sheets of 8x10 single weight paper at a time, the paper safe features a rubber-edged push bar, similar to a squeegee, which moves forward as a door is swung open and pushes a single sheet of paper out through a narrow slit uncovered by the door. Closing the door resets the feed bar for the next sheet and simultaneously seals the slit against light entering.

The paper safe is made of ¾-in. lumber and ⅜-in. plywood. It is basically a box with inside dimensions measuring exactly 8x10 in. This box is divided into two compartments, the upper one serving as the paper storage section and the lower compartment housing the feed bar mechanism. For light-tight purposes, all joints are grooved or rabbetted as shown in the drawing.

The sides of the box, made of ¾-in. wood, have ½ in. wide by ½ in. deep parallel grooves cut in them, to provide channels for the carriage of the feed bar mechanism to slide in. The two sliding sections of the feed bar carriage are 5½ in. lengths of ½x¾-in. wood. These, when fitted into the ½-in. deep grooves in the box sides, project ¼ in. beyond the inside surfaces—enough to attach crosspieces and to hold the feed unit together in the form of a frame.

The push bar is made of two pieces of ¼-in. plywood, measuring 1½x7⅜ in., between which are sandwiched two strips of inner tube rubber. • —*Louis Hochman*



1/4" X 3/8" RABBET FRONT AND BACK

3/4" X 9 1/2" X 10 3/4" TOP COVER (BOTTOM SAME)

3/8" X 8"(-) X 10"(-) PRESSURE PLATE

UPHOLSTERY SPRINGS

1/4" X 3/4" RABBET ON SIDES

JEWEL CASE CATCH

3/8" X 6 1/2" X 8 1/2" PLYWOOD 'FLOOR'

3/8" X 9" PLYWOOD FRONT AND BACK WALLS

PUSHER BAR

10 3/4"

9 1/2"

H. CLARK

8"

ADJUST SLIT TO PASS ONE SHEET

1/8" SLIT SEAL STRIP

1 1/8" 1 1/4"

3/8" X 1/2" RABBET EACH END

(INTO SLIDE BAR)

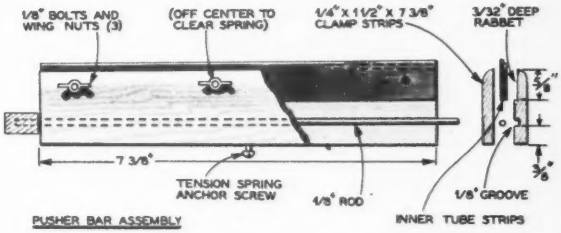
3/8" X 1 1/2" X 8 1/2" FRONT 'FLOOR'

3/4" X 2 3/4" X 9 1/2" FRONT COVER

1" BUTT HINGES (2)

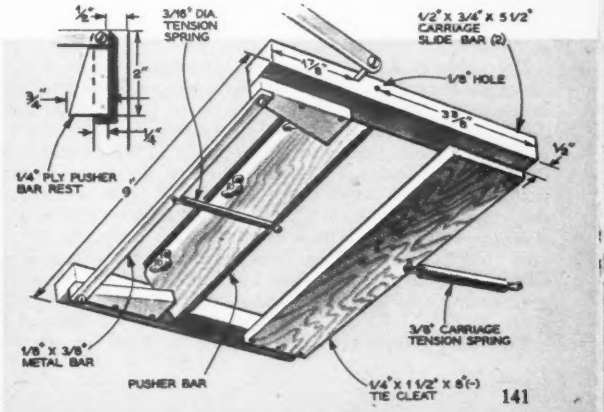
3/16" X 1 3/4" SLOT (ONE EACH SIDE)

3/8" X 4 3/8" METAL LEVER



PUSHER BAR ASSEMBLY

The sensitized paper is placed emulsion side up since the feed bar grips the underside. The safe will hold about fifty sheets of single weight 8x10 paper.



PUSHER BAR CARRIAGE ASSEMBLY

[*Continued from page* 120]

delving into the dollars and sense part of the program let's go back to the question, "Why do you think new rings are necessary?" The compression test shows all cylinders down from normal for the particular make and year of engine, and a variation of more than 10 pounds compression between several of them. This seems to point to worn compression rings which usually mean worn oil control rings as well, but you want to be sure. So you repeat the test, pouring some engine oil into each cylinder just before testing it. You do not squirt the oil in because you do not want it to touch the valves. The oil should run down around the rings to seal them temporarily. If compression doesn't improve you will know that the valves, not the rings, are the real source of your trouble. Often lack of power, in spite of a satisfactory compression reading, is due to late ignition timing, clutch slippage, draggy brakes or faulty fuel feed. These should be checked into before jumping through the hoop of new rings. Not to be overlooked is the exhaust system. There may be no blue smoke here to hint of worn or gummy rings, but if there is a pinched tail pipe or a blocked muffler it is sheer waste to get new rings.

All tests having satisfied you that new rings are the answer the next step is to avoid the pitfalls when getting the engine ready for the rings of your particular choice. A common mistake is to remove the cylinder head before it has cooled off. This is quite likely to warp it, making replacement risky. Care must be taken to place the valves in correct order in a rack so that there will be no error when replacing them. Removal and cleaning of the intake manifold may or may not be necessary, but is usually desirable not merely to make tappet adjusting easier but because any gummy deposits here will retard movement of intake gases and cause uneven distribution. An engine that doesn't get the same volume of mixture to each cylinder will be as inefficient as if its valving were below par.

Preparation and examination overlap, so for these two phases of the actual work you'll be switching from the first to the second fingers or your second handful of reminders. For instance, take a look under the heads of the intake valves to see if there is evidence of oil entering through worn valve guides. Oil also can enter through the intake port if the engine is equipped with a vacuum booster pump that may have developed a leaky diaphragm. Check the plugs, too. If they are fouled they may be too cold a type for the particular engine.

Two very important things should be done before the old rings are removed. First is to measure the cylinders for wear. After carefully cleaning the top of the cylinder block (using care not to allow any dirt or carbon to fall down into the water jackets or the valve ports) use an inside micrometer to measure for taper and out-of-round. Taper wear is found by subtracting the inside bore reading at the smallest diameter in the bottom of the cylinder from the reading which you take just below the top travel point of the piston. Out-of-round conditions or scoring may be visible to the eye, but it is always important to check the former with a micrometer. There's some difference of opinion among manufacturers regarding the amount of wear their engines can stand before reboring is required, but a safe rule is that the engine should not show more than .0005 inch of taper or out-of-round.

Equally important is the need for removing the ridge which is formed at the top of each cylinder. This should be done before the pistons are removed because in removal the second ring land on the piston may catch and break off. Be careful when using a ridge reamer that you do not cut into the cylinder wall. Remember, too, that there will be some unevenness at the top of each cylinder when the engine is cold and that the main point is to work toward maximum smoothness at the lower areas of the bores. Cylinder glaze should be removed from the walls by honing so that the new rings will seat instead of sliding too freely over the wall surface, but this should be done after the pistons are removed.

Now we are up to the important business of removing the strategic parts. Down comes the engine pan for removal of sludge and disassembly of the rod bearing caps. Pistons can then be pushed up. Mechanics use a rack for holding the pistons and rods firmly while scraping carbon from the piston tops. Rings themselves should be removed with a special tool. You can clean the ring grooves with a broken ring with an end filed into a square edge, but don't remove carbon from the narrow top groove on any piston with this fixture because the carbon serves to insulate the top ring from excess top piston heat.

Work on the bearings will be needed if the engine has been using oil or if there has been evidence of knocks, but in this story we are concerned merely with restoring power through checking compression losses. If necessary, pistons should be re-sized to original specifications by any one of the several processes for this purpose. Rods should be checked for alignment, pistons pins usually should be replaced, and all drain holes in the pistons should be cleaned out. After a thor-

Car Care

ough chemical cleaning of the ring grooves fit one of the new rings and make sure that the clearance between its side and the ring groove isn't over .006 in.

A good mechanic will be especially careful to check the top ring groove because this is the one that wears the most. He will roll a new ring around the piston in its groove to see if there is any binding. Usually the new ring will be too loose. Then either the piston should be replaced or the ring grooves made narrower. If the latter is done the new compression ring will have to be $\frac{1}{32}$ inch wider or a steel spacer installed above a new standard ring. The minimum clearance for a compression ring is .0015 in.

Before installing the pistons into their cylinders with a piston ring compressor, make sure all rings are properly gapped. The amount of gap is based upon the bore. That is, if the bore is 3½ in. or less the gap must be at least .007 in. Between $3\frac{9}{16}$ in. and 4⅛ in. the minimum should be .010 in. Stagger the gaps of course.

After a check of tappets, head bolts, mixture and ignition timing the engine is ready to power the car on the road. Speeds should be normal, between 20 and 40 miles per hour, with some acceleration. However, don't accelerate in high gear at lower speeds as this causes too much "lugging." No sustained higher speeds, either. For the power that is the reward of a painstaking ring job just drive naturally during the first hundred miles. •

Butler's Table

[*Continued from page* 129]

align the holes. After all the holes are completed and checked for depth, you can begin gluing up the joints. Coating the dowel and the inside of the matching hole with light applications of glue, insert the dowel, driving to full depth. Insert the second dowel for that joint and then recoat the matching apron. Drive together with a soft wood block under your mallet to prevent marring your work.

The hinges, which should be about 1½x2½ in., should be set very carefully. Scribe the marks for the recesses, and chisel them out. You'll discover that the hinges have springs on the bottom, so leave space for these in the center panel in order to achieve proper clearance. Allow plenty of room, because when the leaf is raised, the spring opens and requires an additional ⅛ in. Set all screws, and sand down the entire unit.

In finishing, apply stain if your wood requires accentuation of the grain. Or simply apply several coats of shellac or lacquer. •

HI-FI Record Player

[*Continued from page* 103]

While waiting for the remover, stain, bleach, filler, or finish coats to dry; ten or twelve hours time can be spent in assembling the amplifier kit.

The one shown in the illustrations is the Heath Kit 20-watt amplifier made by the Heath Company in Benton Harbor, Mich. This amplifier, Model A-6A can be used with AM and FM tuners and will operate crystal or magnetic pickups. (Magnetic pickups because of their low operating voltage need a stage of preamplification, which is built into this amplifier.)

The pickup selected was a General Electric arm equipped with a variable reluctance cartridge, model UPX-006. The turn-around cartridge houses two needles, one of sapphire with a 1 mil radius for playing LP's and 45's and the other with a 3 mil radius for use on standard 78 rpm records. The speaker is a 12 in. General Electric. As far as the turntable is concerned, a good deal depends upon whether most of your records are 78 rpm's in which case a record changer is advisable or whether you are planning to stick 33⅓ LP records. Inasmuch as a 12 in. LP will play for about 20 minutes, a record changer is really not a must. A triple speed phonograph turntable, Model TS, made by General Industries Co., of Elyria, Ohio, is adjustable for playing 33, 45 or 78 rpm records. The pickup arm, the motor, the speaker and the amplifier will cost you less than $75.

Directions given with the amplifier kit are step-by-step, clear, and easy to follow. Large size pictorials to supplement those in the manual are furnished. These are excellent and are a great help when they are fastened to a wall above the working area.

In the assembly it is a good idea to use solid wire, either multi-colored or spaghetti-covered for tracing circuits. Remember to keep the tubes out of the sockets, and wrap paper around the transformers to keep them from getting scratched during the wiring process.

Some soldering tips are in order. Make sure that all joints are both mechanically and electrically secure. Never use pastes or acids in radio work, use a rosin core solder. Some parts will solder better if they are tinned first. Use a well-tinned soldering copper and keep it bright by rubbing the tip over steel wool.

When testing the set remember that in using a high quality magnetic pickup in a high level (20 watt) system you may get some feed back at extremely high volume when the speaker and turntable are in the same cabinet. Sponge rubber cushions will help. •

This is the basic, compact setup for tray development of orthochromatic roll film. The red safelight is attached to a gooseneck desk lamp, the bowls came from the kitchen and the only supplies from the photo shop are the developer, hypo and thermometer.

basic darkroom equipment

It's surprising how little you need to set up a darkroom for developing and printing pictures.

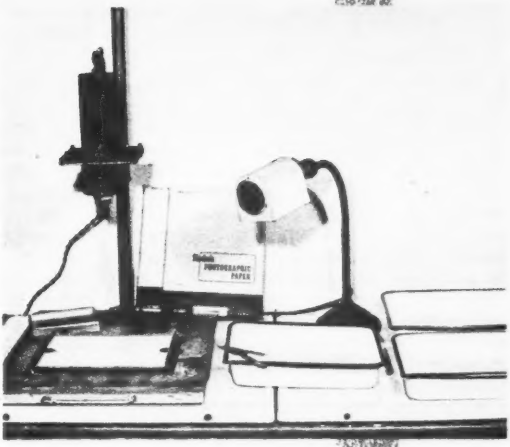
By Robert Hertzberg

PERHAPS you are one of the many people who embark on their photographic careers after you move into your new house. This means that you not only will build a darkroom, but that you will also have to outfit it from scratch, so you want to start with as little equipment as possible.

The first stage of all photographic darkroom activity is the developing of the film negative. You have an exposed roll and you intend to buy only the absolute minimum to enable you to see the finished negatives. What do you need?

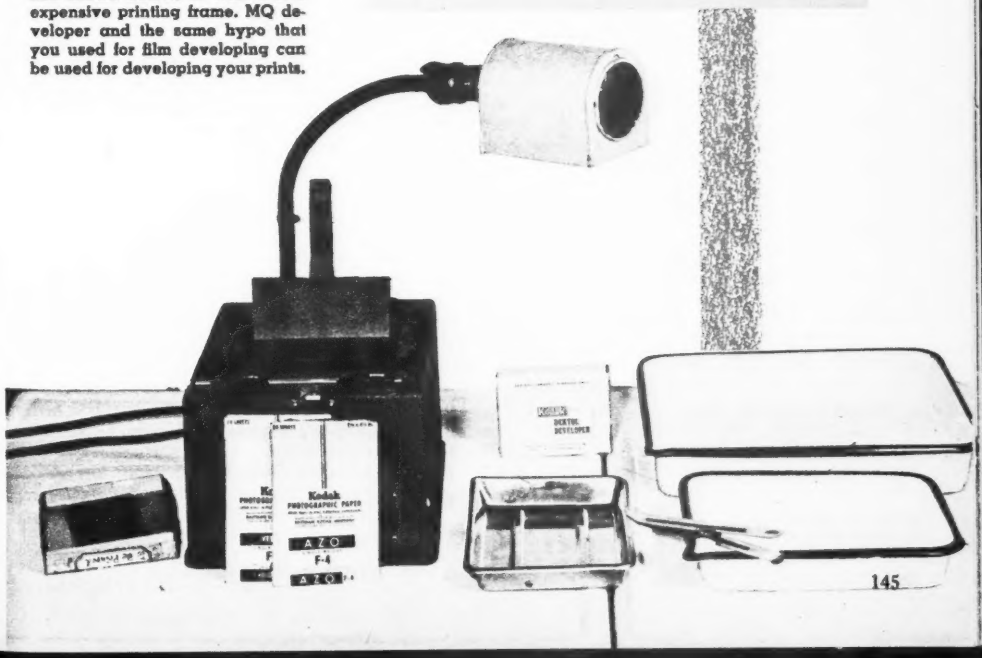
To some extent the answer depends on the kind and size of your film. If it's Verichrome or Plenachrome, and any size larger than 35mm, such as 127, 120 or 620, you can use the old-fashioned but still effective method of see-saw development in open trays. You will need the following: 1. A small safelight, to fit a standard lamp socket. The filter in the safelight should be a deep red, No. 2 Wratten or its equivalent. 2. A photographic thermometer. This is something you will use constantly, so get a good one. Eventually, you'll need two, one with a thin stem that you can put down the neck of bottles and inside tanks, and the other of short, squat construction, with a metal guard, that you can hang over a shallow [*Continued on page* 148]

A little more space is required for enlarging. Also there will be added expenses in bigger trays, an enlarger with an easel and a yellow safelight. The enlarging paper will also cost more than the contact paper.



A daylight tank is best for developing film and the most practical type is the adjustable plastic tank which takes different film sizes. No safelight is used for this work as the film is loaded in total darkness. A long-stemmed thermometer is used to check solutions.

Contact printing can be done with either the type of printing box shown below, or with a less expensive printing frame. MQ developer and the same hypo that you used for film developing can be used for developing your prints.



Easy Chair

[*Continued from page* 105]

frame. Sway braces are made from the heavy wire by bending one end of the wire around the wire frame and the other end goes through a hole that has been drilled near the edge of the coil in the second row. Place metal washer over wire and fasten wire to the washer on the bottom side of the plywood base. Install six sway braces, two to each side. Heavy wire also forms corner braces across top of coils.

Cross-tie each spring with heavy cord, pull cord very taut and tack ends to plywood. Cross-tie coils in four directions and diagonally until each coil is even across the top.

The assembly for the back cushion is the same as the bottom cushion except nine coils are equally spaced three to a row. Set the coils in 1 in. from the front and sides and 5 in. from the back.

If desired, you can eliminate most of the upholstery operations by using foam rubber for both the seat and back. This material comes in various thicknesses and can be cut to exact specifications. In this case, you'd only have to cover the pillows.

Two yards of burlap covers springs on both the back and bottom cushions. Fit burlap over springs, tacking edges to plywood. Ten yards of upholstery padding are needed to pad the two cushions and the chair arms; eight yards for the cushions and two for the chair arms.

Four yards of light weight plastic upholstery material 36 in. wide covers the arms, the front panel below the bottom cushion, and the little narrow strip along the edge of the back support.

Place bottom cushion in the chair, fasten with screws through the 5 in. of exposed plywood to the seat supports. Turn chair upside down and drill holes through the two seat supports near the front of the chair. Insert screws to hold the front of the bottom cushion to the frame. Set the back cushion in the chair. Fasten cushion to the back support by drilling holes near the top, middle and bottom of support, inserting screws through the boards into the plywood base of the cushion. The chair back is covered with a panel of upholstery material.

Four-inch-square plastic Dek-Tufts were used to finish the front of the arm upright members. Dek-Tufts can be purchased in different colors from mail order houses.

The 9½x22½-in. front panel is fastened to the chair with stove bolts and wing nuts. Spot-glue the panel, and cover with a thin layer of cotton padding before upholstering with plastic material. Finally, install four gliders, one at each end of the bottom frames. •

Termites

[*Continued from page* 110]

shrubs and flowers are near the area to be treated (within 1 to 3 ft.) and if it is not desirable to remove them temporarily, the plants may be protected from the chemicals by lining the side of the trench next to the shrubbery with paraffined canvas or copper-coated kraft paper. Never apply soil poisons immediately after a heavy rain, since there is little opportunity for the chemicals to penetrate into the ground. Wear rubber gloves when working with these chemicals.

If concrete driveways or walks run next to the foundation, making it impossible to dig a trench, use a cold chisel to drive some holes into the concrete, starting about 6 in. away from the wall. Make these holes at distance of about 2 ft. in the infested area only. In each hole pour the soil poison with an oil can.

Prevention of conditions that favor termite infestation is of course the most effective and cheapest protection against an actual or possible attack. Clear your land around the foundation of all wood debris and do not set trellises and arbors next to the house. Don't let untreated wood touch the soil unless the wood is impregnated with a preservative. Siding, wood trim and sheathing should never be closer to the ground than 6 in. Joints and spaces around pipes passing through floors and walls should be sealed with coal-tar pitch and copper shields.

Termites require considerable moisture in order to exist. Therefore make sure that there is good drainage away from the foundation. Repair leaky roofs, pipes and stop condensation whenever possible. Give unexcavated areas proper ventilation—about 2 square feet for every 25 feet of exterior wall. •

Model Half-Track

[*Continued from page* 122]

The battery will fit between the seats of the rear of the car without any trouble and is held in place with Scotch tape after the wiring is completed. The battery is hidden by a canvas covered wood top. The switch, hidden beneath the canvas, is fastened to the wood. Pad the canvas with cotton.

Now solder one wire from the switch to the battery and the other switch wire to the motor. Other lead of motor goes to the battery. If the motor turns the wheels backward, reverse the wires on the motor terminals. Fasten the battery with Scotch tape to the car floor. You need not paint the car for it is a good Army color. Model airplane "decals" may be used if an insignia or numbers are desired. •

Survival Kit

[*Continued from page* 111]

parts of water. It is recommended for open wounds, cuts, and scratches, but must *never* be used for burns.

In the treatment of shock, 1 teaspoonful of salt and ½ teaspoonful of baking soda is dissolved in a quart of water. The patient drinks as much as he wants. However, do not try to force the liquid on an unconscious or semi-conscious individual.

Commercially prepared eye drops or castor oil may be used to relieve eyes that have been irritated by dust, smoke, or fumes. Cold compresses should be applied every 20 minutes.

When storing your flashlight, wrap the batteries in a moisture-proof covering; do not keep them in the flashlight case.

A large cardboard carton can be converted into an excellent container for all 20 items. Seal all the bottom seams with masking tape, then apply a few coats of lacquer both inside and out. When dry, pack the assembled items, cover, and seal. Now cover the entire carton with lacquer.

The Superintendent of Documents, Washington 25, D. C., has several booklets on first aid, civil defense, etc. These are available at nominal prices.

After all precautions have been taken, may we never have to make use of them.

—*Clarence A. Martin* •

The Carpenter's Brace

[*Continued from page* 131]

that won't budge under an ordinary screwdriver.

A brace needs no maintenance other than a drop of oil every few months in the head bearing and the ratchet. Auger bits, however, require attention and care. They are made of comparatively soft steel and are vulnerable to damage by hidden nails and screws, rock-hard knots, etc. Brick, cement and mortar are particularly rough on augers, so be especially cautious when making holes in window frames for television and radio lead-ins and the like.

The cutting nibs and lips of augers can be touched up with a file or a slip stone, but only touched up; once mashed or broken, they cannot be reshaped by grinding, as can twist drills, and must simply be discarded. So don't drop bits on hard floors or let other heavy tools bang into them. When not in use, keep them in a canvas roll or in individual compartments in a wooden box with a cover.

Screwdriver bits, countersinks and reamers usually last for years. They can be touched up easily on a grinding wheel.

—*Robert Hertzberg* •

Drilling Holes In Glass

[*Continued from page* 127]

work so that it grinds a symmetrical hole. A "drill" that works fine is merely a short piece of rigid brass tubing of the desired hole diameter. File the end smooth and square, and with a hacksaw cut across a diameter so that two slots about $\frac{1}{16}$ in. deep are formed.

To a tablespoon of powder add half as much turpentine and mix with a small wooden splint.

With the little splint apply a mound of the abrasive paste to the spot where you want the hole. Adjust the belt drive of the drill press for lowest speed, and bear down on the feed lever. The edge of the drill will press the powder against the glass, and immediately you'll hear a grinding sound. About every five seconds, let up on the feed lever, paddle the powder paste back onto the hole location, and bear down again. In about one minute you'll see the definite outline of a circle on the glass. Note that the drill doesn't grind the entire hole area, but cuts out a neat little disk.

You can use a power drill instead of a drill press, but if you try to hold it free hand you'll find that the grinding action is spotty and takes a long time. Why not use this glass drilling job as the excuse to buy a stand that converts a portable drill into the equivalent of a drill press?—*Robert Hertzberg* •

Pictures With Binoculars

[*Continued from page* 139]

the camera lens. Clearance should be allowed between the eyepiece and the lens mounting for focusing.

To check focus, place a piece of ground glass or waxed paper in place of the film. For best results, place pages of printed matter with good sized letters at graduated distances. Four or five stages will give satisfactory results; the closest at 24 ft. and the others 30 ft., 40 ft., 55 ft. and 75 ft. At distances of a hundred feet and beyond, the camera should be set at infinity. When you have the right eyepiece connected to the camera look through the left one with your right eye and focus the binocular sharply on the object; adjust the camera lens until the image registers sharply on the ground glass. Take down the reading for that distance and continue to the next, thereby building up a scale for all distances. If the binoculars are individually focusing, they must be adjusted before they are clamped on to the base. If they are focused centrally, it is best to set the adjustments at zero. The nearer you are to the object the more accurately the distance must be gauged. Also, unless the exposure is made at high speed, the camera should be placed on the tripod. •

Darkroom Equipment

[*Continued from page* 144]

tray. Since you are starting with tray development, buy the latter type. 3. A package of universal type developer in envelopes; also known as MQ. 4. A quart or half-gallon can of acid fixer, or hypo.

Mix one packet of developer and the entire quantity of hypo, in accordance with the directions on the containers. You won't save the developer after it's been used, but you'll use the hypo over again many times. Put it in a bottle with a plastic screw cap. You're probably wearing the only other necessary item of equipment, a watch. All film developing is done on a time-temperature basis. The little instruction sheet packed with the film gives you all this necessary information.

For basic tray developing, you need three vessels: the first contains developer, the second water and the third hypo, all at the same temperature. In a dark room, with only the dull red light of the safelight on the set-up of trays, remove the paper backing as you unroll the film. Submerge one end of the roll at a time in the water to soften the film. The entire roll is see-sawed through the water until it loses its springy feeling. Note the time and see-saw the film through the developer for the required time. Transfer the film to the water dish, dunk it up and down three or four times and move it to the hypo dish. See-saw it up and down slowly until ten minutes have passed. You can now turn on the room lights and examine the negatives. Wash the film in a gentle stream of water at the same temperature in the sink, for about 15 minutes; swab it down with a wad of absorbent cotton and hang it up to dry.

You'll soon graduate to the tank method of developing, which is the only practical way to handle 35mm film, which is about five feet long, and all panchromatic film, which must be processed in complete darkness. Your purchase list would then include the following: 1. A molded plastic or stainless steel roll film tank. Most of the plastic tanks are adjustable to all popular widths of film. The metal tanks are not adjustable, but individual reels for the various sizes of film are available. 2. A long-stem thermometer. 3. A package of fine-grain developer. This can be used for many rolls of film. 4. A can of hypo.

Notice that the safelight is missing from this list. You don't need one for developing film because you load the latter into the light-tight tank in complete darkness and do all the remaining steps in room illumination. Your wrist watch, of course, is still with you.

In tank developing, you pour the chemicals in and out of the tank, instead of dunking the film into successive trays. Again, you must go entirely by time and temperature. After the fixing is completed, open the tank, pour the hypo back into its bottle and wash the film by running water into the tank. A small glass or plastic funnel will facilitate pouring.

Good negatives are half the battle. Now you will want prints. It is highly advisable to start with contact printing, that is, making prints the same size as the negatives. This will give you valuable and necessary experience in handling the sensitized paper. Exactly the same chemical processing is used for enlargements, the only difference being in the size of the sheets of paper.

Your basic shopping list for your contact printing stage is as follows: 1. Contact printer taking negatives from 35mm to 4x5. 2. A safelight, with a yellow-orange filter. 3. Four trays. These take a little consideration as you're making only small prints now, but you'll certainly go in for enlarging very soon. In the developer and short-stop trays you handle one print at a time, but in the hypo and washing trays the prints accumulate. My recommendation therefore, is that you buy two 11x14 trays immediately for the two latter functions, with the assurance that you'll use them profitably. Also buy one 5x7 tray for small print development and one 8x10 tray for the short stop. 4. Print developer in dry or concentrated liquid form, to be mixed with water. Use the developer recommended for the particular contact paper you select. You don't need new hypo; the solution you already used for the film is okay. 5. Several envelopes of contact paper to match your negatives. By several I mean one each in the No. 1, No. 2, and No. 3, grades. After some experience in printing you'll be able to select the right grade of paper for any particular negative, but initially you'll have to experiment a bit. Buy matte finish paper, as this can be dried on inexpensive blotter sheets. 6. Some blotter sheets, a blotter roll, or a blotter book, for drying matte prints. 7. A tray thermometer, if you haven't already bought one for your first efforts at tray development of films.

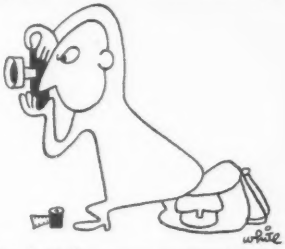
For enlarging, you need very little in addition to what you have gathered so far. The major item of expense is the enlarger itself. To supplement this, you will need an easel, one more 8x10-in. tray and a supply of enlarging paper.

With only the equipment and supplies listed in this article, you can turn out pictures that will excite oohs and ahs from your friends and family. •

Measuring hypo crystals can be done with a graduate as crystals occupy almost same volume as a fluid ounce of water.

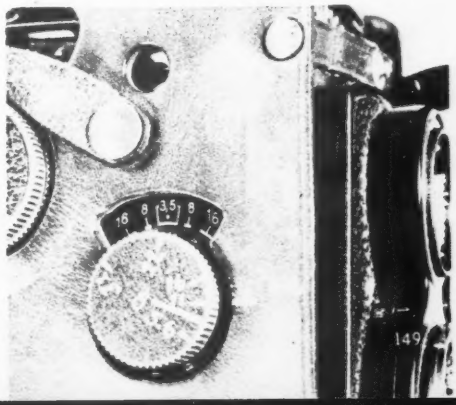
Screw caps on solution bottles often rust and stick and are hard to remove. To avoid this, try using a rubber sink stopper.

PHOTO SHORTS



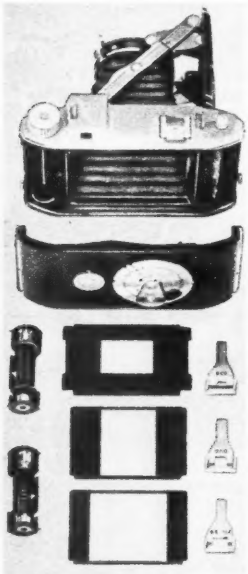
Portable rack for drying negatives is made from scrap wood and wire. Handy if darkroom is moved in and out of kitchen.

Focusing knob gives correct f-stop as distances are changed. This works when using the same film, shutter speed and bulb.

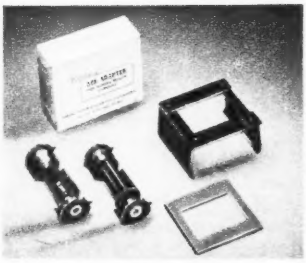


Leather carrying cases—There's no better way to protect your camera than with a sturdy leather Kodak carrying case. Gives it a smart appearance, too. At left is top-grain Kodak Field Case for Kodak Pony 828 Camera, $6.50. Other cases from $3.95 to $10.50 (simulated leather case for Kodak Duaflex Cameras, $2.50). Your Kodak dealer can fit *your* camera with a Kodak carrying case.

Spring Round-up of

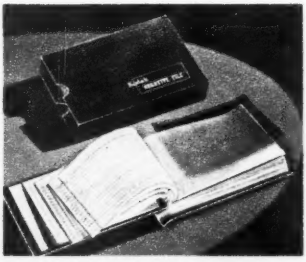


Get 4 picture sizes—Kodak Tourist Adapter Kit for de luxe "Tourist" Cameras permits color shots on 828 film, economical half and square pictures on 620 films. $13.25.



Equip your Kodak Reflex Camera for Kodachrome Film—The 828 Adapter for Kodak Reflex Cameras permits you to use economical Bantam-size films—both color and black-and-white. Kit consists of back-frame mask, view-finder mask, and special spool baskets. Price complete: $4.59.

Safe way to clean your lens—Kodak Lens Cleaning Paper and Kodak Lens Cleaner are made to remove dirt and dust from optical surfaces without scratching. Paper comes in booklets of 25 4x6-inch sheets. $.90 for 12 booklets—$.40 for 1-ounce bottle of cleaner.



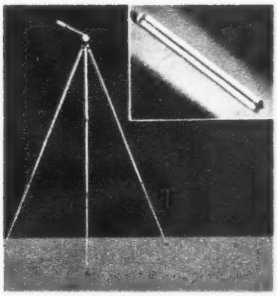
Keep negatives safe and handy—Kodak Negative Files (left) provide a convenient way to keep negatives in order and easily identified. Transparent, numbered envelopes hold the individual negatives or negative strips. Index pages give quick reference. Sizes from 35mm. to 5 x 7 inches. From $2.37.

Get in the picture yourself—Attach a Kodak Auto-Release to any camera which has a cable release socket. Set it . . . you have 10 seconds before the shutter clicks. For flash shots, too. $3.86 (does not include cable release).

Prevents jarring of camera—The Kodak Metal Cable Release, No. 5, can be used for "T", "B", or instantaneous exposures. The non-stretching braided metal won't kink or twist. 7-inch size is $1.05; 12-inch size, $1.35.

Lets you take time exposures—Kodak T.B.I. Metal Cable Release, No. 2, is made particularly for cameras with "B" but with no "T" setting. The release can be used for "T", "B", or instantaneous exposures. Price: $3.43.

Useful Photo Specialties



Sure way to steady your camera—Kodak Eye-Level Tripod (for still or movie cameras) adjusts for heights from 2 to 5 feet. Folds to 22½ inches. Made of aluminum, it weighs only 2 lbs. $20. (Tripod Head not included.)

For effortless "panning"—The Kodak Turn-Tilt Tripod Head permits you to swing camera while photographing a moving object—without jarring the camera. Multiple-disk, felt-friction clutches insure smooth action. $13.25.

Mount pictures securely—Kodak Thermount Tissue and Kodak Thermount Iron provide a secure method for mounting both black-and-white and color pictures. Iron, $9.85. Tissue (in variety of sizes), from $.20 per package.

You're sure to find all these useful photo specialties (and many other items) at your Kodak dealer's. Make use of his professional knowledge and experience. He'll always be glad to help you choose the right photographic equipment for your needs.

Prices subject to change without notice

EASTMAN KODAK COMPANY, ROCHESTER 4, N. Y.

Kodak
TRADE-MARK

Overhaul—Or Haul Away

[*Continued from page* 89]

does little harm, if any, aside from wear and tear on the owner's nerves.

Between 30,000 and 40,000 miles you can expect to install new brakes, king pins, battery, tires and most of the ignition system, and to put in a rebuilt fuel pump for luck. Oddly enough when these few things are added, the car is usually good for another 30,000 miles without much trouble except for another set of tires and some fresh spark plugs, points and a possible clutch job around 50,000 miles, especially if your wife rides it (the way I suspect mine does sometimes!).

After 40,000 miles the springs and shocks start getting extra spongy and servicing the shock absorbers with new fluid no longer seems to do much good. New shocks and new coil springs are in order. Actually a complete set of new shock absorbers and springs does not cost too much installed (the cost varies depending on the make of the car) and will give Old Nellie a new lease on life, to say nothing of flattening out that bad bump on Elm Street. At high cruising speeds you will notice that your car's tail no longer wobbles dangerously and you will immediately sense that you have more road control. The old coil springs just got tired and so did the shocks. New springs and shocks, and a thorough front-end job, are definite musts for all cars with over 50,000 miles on them.

If the owner of a car that is getting old (40,000 miles plus) will keep a log, he can more or less schedule his future work so that it doesn't all land on him at the same time. This is what many bus and truck operators do and it pays off. Carburetors, for example, at this age no longer permit the car to idle as it once did because of air leakage around the butterfly bushings. Possibly, too, the needle and seat have already started to leak. In 40,000 miles the little brass needle builds up quite a shoulder and eventually it will no longer lock off the flow from the fuel pump when the correct level is reached, so the engine will start to flood at slow speeds. Most big bus and truck lines and taxi fleets have all carburetors rebuilt every six months, whether they need it or not. This pays off in gasoline saving alone. If you needed a brake relining job at 30,000 miles you will most likely need another before you reach 60,000. Putting this off may score and ruin your brake drums. In short, look ahead and plan.

Somewhere, usually, between 50,000 and 75,000 miles, the old engine starts showing signs of galloping paralysis. You are now adding a quart of oil nearly every time you get gas and the old boat doesn't seem to have the wallop it once had when getting away from a traffic light. The plugs now foul up quite often, you leave a blue trail of smoke wherever you go and in the morning when you start up there are some deep sounding knocks that weren't there when baby was young and shiny. Also, the shocks have long since dropped the absorber part of their title. What to do? Let's suppose you decide you're still going to hang on to the old goat.

A lot of companies specialize in selling factory rebuilt engines and one of these is apt to be your best bet. If the rebuilding is done properly and not just so-called "reconditioned," the bearings, wrist pins and all other components are better fitted than on a new car. The Ford company has some of its rebuilt engines sub-contracted to reliable firms and these jobs are as good as and often better than new engines. There are, however, some gyp artists who rebuild engines with old parts, cleaned up to look new, and installed by untrained slobs who couldn't even put a blade in a razor correctly.

If you're not sure, it might be a better bet to have your own engine rebuilt by a mechanic you trust, provided you're willing to wait the additional time it will take and provided he has proper equipment for the job. Cost to you should be about the same as buying an exchange engine. Here's what has to be done:

The block must be rebored. All valves, valve springs, guides, etc. must be replaced with new parts. The water pump might just as well be replaced and the valve cams checked for off-size wear. In fact, as long as you are doing the job, do it right and replace everything that shows the slightest sign of hard use. Today, the mechanic's time is going to cost a lot more than the new parts. The major expense is yanking the engine out of the frame and spreading it around, piece by piece. Any parts replacement now will cost only a fraction of what it would cost installed separately.

Before starting work, you should get a total estimate on just what a complete rebuild will cost. Compare this with the cost of a factory-built engine completely installed. Some companies do not go in for selling or exchanging rebuilt engines. If your car is one of these makes, get the cost of a new engine. If your mechanic can't rebuild completely for a lot less than the price of a new one, it might pay (if you're that much in love with the old can) to put in a new engine. But such cases are rare.

With one or two exceptions, any car made in America today will go way better than 100,000 miles, with intelligent care. Correct

[*Continued on page* 156]

The Amateur Telescope Maker's Page

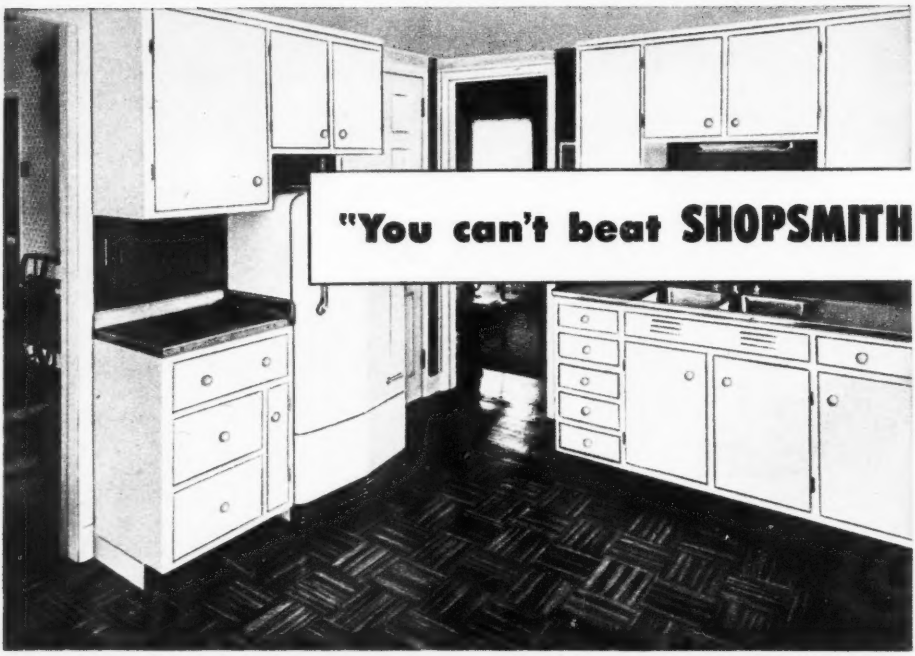
A massive solar prominence photographed with a Westinghouse coronagraph at Climax, Colo., home station of the High Altitude Observatory of Harvard University and University of Colorado. This prominence of incandescent hydrogen gas is 133,000 miles above the surface of the sun. The fiery gases travel at the rate of 600,000 mph.

Right: George W. Johnson of Hagerman, Idaho, and his 3 in. equatorially mounted telescope made with the aid of MI plans. Polar axis is adjustable.

DO you need a big telescope for serious stellar observation? The answer is "no." Even a modest instrument equipped with a 3-in. mirror will bring you many an evening of satisfying observation.

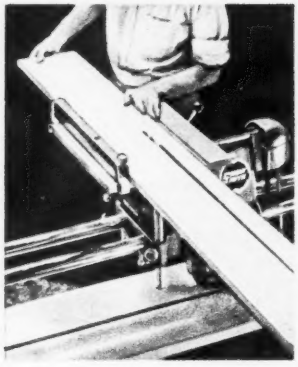
George W. Johnson of Hagerman, Idaho built such a small job with the help of MECHANIX ILLUSTRATED Plan No. P-6. However, instead of grinding a 6-in. mirror, he purchased a 3-in. ready-made one from Harry Ross of New York City. The eyepiece is made of brass and aluminum with gear teeth cut into the side of the adapter so that it can be focused by means of a knurled knob.

The entire instrument is equatorially mounted with an adjustable polar axis which can be set to any degree of latitude. The declination axis is turned through a 60 to 1 worm gear. The declination and polar axis scales may be seen right below the tube and at the bottom of the polar axis bearing tube. The main tube may be turned in its mount for [*Continued on page* 192]

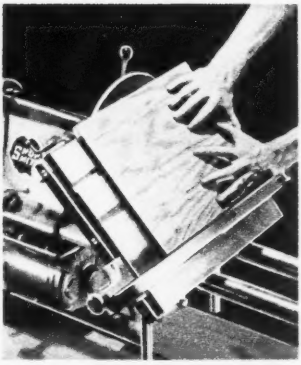


Kitchen designed and built by A. A. Myrus, Oneonta, N. Y.

1 **"FULL-SIZE PLYWOOD PANELS** are hard to handle on the average table saw. But not on SHOPSMITH. The SHOPSMITH table extension gives you plenty of working surface *— up to 48" between blade and fence.* Not many saws can match that!"



2 **"HAIRLINE CUTS.** Another thing I like about SHOPSMITH is its extremely accurate blade-to-fence setting. You make your fine adjustments by changing the position of the blade with the quill feed lever. It's faster and more accurate than shifting the fence."

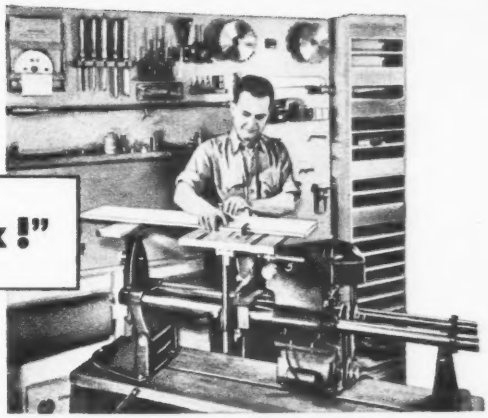


3 **"BEAUTIFUL BEVEL.** Plywood is difficult to bevel with a plane or shaper. It chips and splinters. But I was able to get perfect results with SHOPSMITH set up as a disc sander and the table tilted 45°. Sander was also used to butt-sand drawer fronts and framing members."

SEE SHOPSMITH DEMONSTRATED AT LEADING HARDWARE AND DEPARTMENT STORES OR ANY MONTGOMERY WARD STORE. WRITE FOR FREE CATALOG!

SHOPSMITH is a *complete* power workshop . . .
8" circular saw • 12" disc sander
33" wood lathe • 15" drill press
Horizontal drill

SHOPSMITH complete except for motor*. . . $189.50
*Special ½-hp., capacitor-type 120-volt, 60-cycle motor, $34.50



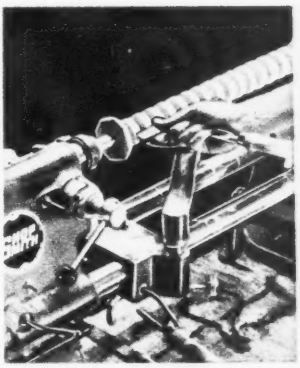
for cabinetwork!"

"I'm remodeling our entire kitchen. It's a big job. But, thanks to SHOPSMITH, I'm saving time and money and having the time of my life.

"Take the cabinetwork, for instance. There's where SHOPSMITH really showed me what it could do. I was able to cut 4' x 8' plywood panels easily and accurately. For 'right-on-the-button' saw blade to fence settings, I used the micro-quill adjustment—only SHOPSMITH has it. I beveled the edges of the cabinet doors with the disc sander. And I switched to the horizontal drill for doweling the maple chopping block.

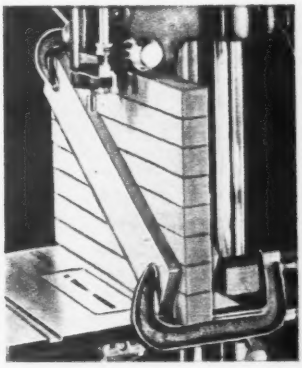
"What especially impresses me is the accuracy of the work SHOPSMITH turns out. Every part fits perfectly. Corners are absolutely square. Dimensions check to the fraction of an inch. One reason for that is the fact that you can use the rip fence and miter gauge as jigs in almost every setup. Another reason is that SHOPSMITH is one integral unit. It can't get out of line.

"And when you add it all up—compactness, ruggedness, flexibility, extra features—it's easy to see why SHOPSMITH is America's most popular power tool."



4 "**KNOBS** for the drawers and cupboard doors were turned fifteen at a time with SHOPSMITH in the lathe position. The SHOPSMITH tool rest slides parallel to work making it faster and easier to turn long pieces. Speeds can be varied from 800 to 3600 rpm."

5 "**HORIZONTAL DRILLING** surely saves time and headaches. I used it to drill maple boards for a doweled chopping block. Table and rip fence served as jigs, made it easier to position holes accurately. The SHOPSMITH spindle floats on *four* ball bearings, has a 4" quill feed."



6 "**GLUE PRESS.** There's almost no limit to the things you can do with SHOPSMITH. After the maple chopping block was glued, I clamped it to the tubular steel ways of the SHOPSMITH, let the weight of the headstock (about 100 pounds) act as a press until glue was set."

SHOP SMITH

MAGNA ENGINEERING CORPORATION
Dept. 196-N
at factory nearest you:
12819 Coit Road, Cleveland 8, Ohio, OR
Menlo Park, California

Please send me the free 16-page SHOPSMITH catalog.

Name_____

Address_____

City_____ State_____

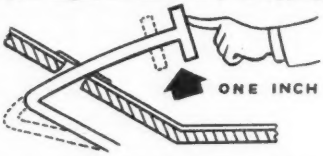
Care and Feeding of Engines

BY S. P. CORP

HOW'S YOUR CLUTCH?

Clutch trouble used to be common. Now clutches have been improved to a point where they are almost trouble-free. Lack of attention and improper driving habits, however, can still cause difficulty.

Check your clutch this spring. It should have an inch of free play in the pedal before it starts to disengage. Press the pedal with your index finger. If there is little or no pedal movement under the pressure of your finger, the clutch may be slipping.



CLUTCH PEDAL FREE PLAY

This can be corrected by adjusting the clutch pedal linkage at the bottom of the pedal. The one inch of free play is to compensate for normal wear.

To avoid excessive clutch wear: (1) Never "ride the clutch." Keep your foot off the pedal except when you are using the clutch. (2) Never slip the clutch to hold your car on a slight grade. (3) Always start your car in low gear, not in second.

SUMMER OIL MUST DO 5 JOBS!

Good oil is cheaper than new parts. Always follow car manufacturer's recommendations as to the viscosity of oil to be used. Remember—it must (1) Reduce friction to prevent wear between moving parts; (2) It must help keep moving parts cool; (3) It must seal piston and rings against loss of compression; (4) It must penetrate into tight places like rings, valve stems and guides; (5) And it must, like a good Navy man, "keep the place clean," picking up foreign particles and depositing them in the oil pan or oil filter.

SPECIAL RINGS FOR LATE-MODEL CARS

New Sealed Power KromeX Ring Sets are the latest answer to the tough punishment of modern engines. They fight heat, friction, corrosion, abrasion! MD-50 Steel Oil Ring controls oil even in badly tapered and out-of-round bores! Write Dept. J-4, Sealed Power Corp., Muskegon, Michigan, for valuable free booklet, "More Power, Less Gas, Less Oil."

Overhaul—Or

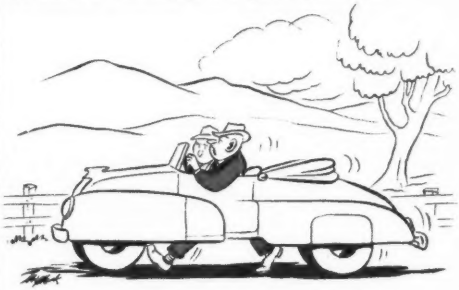
[*Continued from page* 152]

lubrication is the most important single factor in keeping a car going. I have found that by using 30 viscosity crankcase oil and taking a few more minutes to warm up, my engine will last a lot longer without bearing trouble than if I used the manufacturer's recommended 20 oil. The 30 gives a better protection film but 20 is recommended because the manufacturer knows full well that all too many car owners start off quickly with a cold engine without taking the time to warm it up first.

This spring, with material in a bad way, if you are planning an overhaul give it a little thought. If you can afford it and intend to keep your car for some time, it will pay to give it the full rebuild treatment if that is what is indicated by age. If you are only interested in getting it through the summer, a well chosen lick and a promise might do. If your car has never had a ring job before and is burning oil, have rings installed by all means as this will make it run a lot better and should last for quite a few thousand miles. If it has had a ring job before and is now burning oil, a reboring and new pistons are definitely indicated. If you have 15,000 to 20,000 miles on your old plugs, throw them out and get new ones. If your ignition points are pitted, replace them.

Not knowing exactly how far your car has gone, its present condition or how old it is, makes it impossible to recommend definitely just how much should be done to keep it going and for how long. There comes a time, however, when the expense of a rebuild job is far from justified. When several hundred dollars are needed to get Old Nellie back in shape, it is time to consider seriously whether you might not be better off with a new one, or at least a much younger and sprier replacement from a reliable second-hand dealer.

Overhaul it—or haul it away? In the final analysis and after measuring all the angles, you're the one who's going to have to decide. So here's wishing you a good decision. •



"With me, speed is unimportant. Economy is what counts."

KIEKHAEFER

Move up to a MERCURY

the outboard MORE people want MOST

Every day, you see more Mercurys! An impartial survey by a leading outdoor magazine shows that the demand for Mercury has increased far more than the demand for any other outboard:

Here's a mighty Mercury—the "Super 10" Hurricane — no other outboard in the 20 cubic inch class offers such a range of performance, from slowest troll to record-slashing racing speeds.

RATE OF INCREASE OF PREFERENCE	
MERCURY	46.8%
Outboard A	21.3%
Outboard B	13.1%
Outboard C	7.4%

When you MOVE UP TO A MERCURY, you're marked as a sportsman who chooses thoughtfully and well. You're moving up to the outboard that sets the pace for the entire industry . . . the outboard that gives you *the most* performance per dollar and per horsepower. The ONLY outboard with the engineered bonus of Full Jeweled Power — ball and roller bearings at all vital points for an all-'round anti-friction ride.

Features of Mercury Outboard Motors are protected by issued or pending patents.

See your Mercury dealer for a demonstration!

Send for FREE Booklet — "PICK OF THE PILOTS"

KIEKHAEFER CORPORATION, FOND DU LAC, WISCONSIN

[*Continued from page* 95]

a red-faced society woman breezed into a major New York department store. Right behind was her lawyer. She barged angrily into the manager's office, threw a luxurious fur coat on his desk and pointed to an ugly rash that circled her neck like red beads of sand.

"This," she screamed hysterically, "came from your fur coat. This is why I am humiliated. This is why I had to put off a trip I had planned for months. I am starting a suit for $100,000." The lawyer nodded and flaunted his briefcase to back his client's threat.

The department store manager calmed the woman down long enough to put through a call to Max Bachrach. Within an hour, Bachrach was at work on the case.

Through the night he labored, extracting all the chemicals that had gone into processing the coat. Then he examined them under his microscope. They were harmless. Finally, he came across one strange chemical that proved to be a costly perfume. Between fur dyes and perfume, Bachrach reasoned, it was possible for a chemical reaction to set in that might cause an allergic skin to break out in a rash.

Next day the woman was persuaded to wear the coat but to try a different perfume. When she did, the rash disappeared. She kept her coat. The department store kept a valuable customer. But her lawyer lost a $100,000 case.

Bachrach's cases are not confined to criminals and retail business. His standing as the greatest living authority on animal hair has also made him a kind of one-man supreme court for fur dealers all over the world. From Asia to Africa, from Siberia to Canada, fur importers have called upon his vast knowledge for solutions to seemingly impossible mysteries.

For example, there was the time he was confronted with the case of the disappearing Persian lamb pelts. A half-million dollar shipment of the much-demanded tightly curled black fur had been imported from Africa. They were put through a routine process of dyeing in vats. But when they were hauled out of the vats, the rich hair on hundreds of pelts had completely disappeared.

The owners yelled swindle, insisting they had been sold defective furs and called upon the insurance company to make good. Since it was their own agent who had inspected the furs at the docks, the insurance company was prepared to pay—but not before Max Bachrach was called in for a decision.

Bachrach took samples to his office and put them through several of the more than 600 microscopic tests he has developed himself. His keen detective eye came across a strange mold, the type that breeds in burlap. From his own knowledge—acquired after years of reading anything and everything about furs—he knew it was the custom to stretch furs over burlap frames for drying.

Bachrach was ready for a decision. He called in the disputants. "My judgment," the fur detective announced proudly, "is that these pelts had been dried on improperly cleaned burlap frames in Africa. As a result, penicillium molds developed in the fur. Once in the dye, the molds went to work, attacked the skin and dissolved the hair like an army of moths chewing up wool blankets.

"The person responsible is the man who shipped these from Africa."

It was Bachrach's boyhood interest in a toy chemistry set that got him started on his amazing career. Forced to go to work while not even of high-school age, he ended up in a job for a fur wholesaler. Meanwhile, he put himself through high school and expanded his chemistry hobby by taking evening college courses in chemistry and microscopy.

Today, Bachrach himself is the author of three books on fur. One, a 700-page volume that has seen distribution in almost every country in the world, is used by the FBI and other law enforcement agencies.

He is listed as Special Expert and Consultant to the Federal Trade Commission, to the Better Business Bureau's national headquarters and to U. S. Customs. He has been made a member of the American Association for the Advancement of Science. And at New York University, he teaches the country's only college course on furs.

On top of all that he is in court at least once a week giving expert testimony on criminal and business cases involving hair analysis. To back himself up he has amassed the world's greatest collection of fur fingerprints—more than 5,000 files of microscopic hair slides. Give him a hair to split, and he can tell you not only what kind of an animal it came from, but where it was raised, what kind of diet it lived on, whether it was wild or tame, what it ate before it was killed and even how it was killed.

Not long ago the body of a brutally murdered young girl was found in the isolated woods of Pennsylvania's Pocono mountains. A call to State Police Headquarters sent dozens of top-notch sleuths racing to the scene. Despite an intensive search of the immediate area, not a single clue to the girl's mysterious killer could be found.

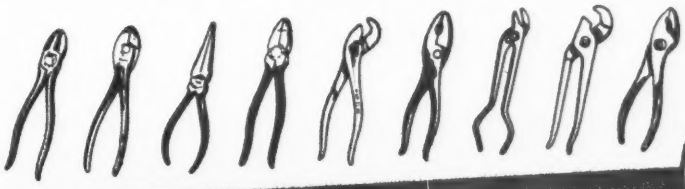
After identification of the victim, police arrested several young men. Questioning nar-

[*Continued on page* 160]

CHANNELLOCK *Belongs*

When Mom or the kids get in a fixin' mood you can bet they'll do a better job when Channellock pliers are handy. Channellocks are easy to use, simple to adjust and—well, darn good pliers. They are made by Champion DeArment who for nearly 3/4 of a century have been making and selling highest quality tools. The next time you're shopping for tools ask to see Channellock pliers. Heft 'em, use 'em, test 'em—then buy 'em. On almost every job requiring tools, you'll find a use for Channellock. And remember, Only Champion DeArment makes Channellock. Send for Catalog Today.

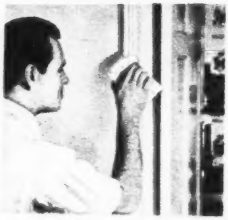
CHAMPION DEARMENT TOOL CO. • Meadville, Pa.



Channellock pliers are listed in the Yellow Pages of most Telephone Directories under "Tools"

Only CHAMPION DEARMENT *makes* CHANNELLOCK

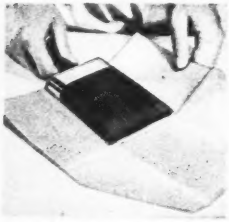
Pointers for home painters Woodwork:



Before painting woodwork, remove all grease and oils so fresh coat will stick better. Use one cup of baking soda to one quart of water. Rinse with fresh water.

If painting over previously stained surface, first sandpaper, dust, then apply prime coat of aluminum paint. Use a nylon-bristled brush for best results.

For neatest work remove doorknobs and hardware before painting. Cut paint odors by placing ammonia in pan of water on floor.



When storing brushes for long periods, clean thoroughly and wrap securely in heavy paper as shown here. Brushes stay in better condition when they're kept in shape.

JOB AFTER JOB you'll get best results with a well-tipped nylon paint brush. Durable Du Pont nylon bristles paint smoother . . . are clean and sanitary . . . never get brittle . . . don't break off even under the roughest treatment. And nylon bristles last from 3 to 5 times longer than ordinary bristles. Leading manufacturers make nylon paint brushes in all types and sizes. Look for the name NYLON on the handle. Be sure to pick the size brush designed for the job... and demand Du Pont nylon bristles.

150th Anniversary

DU PONT

REG. U. S. PAT. OFF.

Better Things for Better Living . . . through Chemistry

The best brushes have **DU PONT NYLON BRISTLES**

Fur Sleuth

[*Continued from page* 158]

rowed the field of guilt to one suspect. Police had nothing to go by, but the suspect was questioned for almost 24 hours. He was by far one of the toughest customers ever grilled at headquarters. He denied ever having seen the girl. And he had a good alibi. Officials were about to let him go.

Just then, a sharp-eyed cop noticed some hairs on the suspect's trousers. It brought into focus one item of clothing found near the girl's body—a cloth coat with a fur collar. The hairs were removed carefully and forwarded to New York for examination by Max Bachrach.

In his neat three-room office in the Penn Terminal Building, capital of the country's multi-million dollar fur industry, Bachrach put the hairs under his microscope and in a matter of minutes had an answer for the Pennsylvania police. The hairs, he told investigators, were nutria fur, the kind a young girl might wear as a fur collar on a cloth coat. Police then followed up with a specimen from the girl's coat collar. That, too, Bachrach told them, was nutria fur. Faced with this damaging evidence, the suspect confessed.

Recently Bachrach was called upon to solve a shocking case of another sort—a priceless ermine had turned into skunk.

It all began last winter when a New York society debutante got back the ermine wrap she had sent away for summer storage. Except for one thing, it was in good shape. That one thing was the little matter of skunk odor. In fact, so strong was the odor from her lily white $4,000 ermine that her family threatened to move out if she didn't get rid of the wrap.

Back she went to the storage company. "Madame," an indignant manager told her, "we do not cater to skunks in this establishment. If your ermine turned to skunk, it's a matter you'll have to look into elsewhere."

A friendly cleaner sent her to Max Bachrach. "Yes," Bachrach told her, "your coat does have a definite skunk odor. But what's the address of your storage company? I think they'll be paying you a bill for damages."

In the storage plant, Bachrach examined a network of refrigeration pipes in a massive fur vault. From a loose-fitting flange, he discovered a slight leak of methyl chloride, the gas used as a refrigerant by the company. Actually, there's nothing wrong with a leak of methyl chloride for any kind of fur—except ermine.

Ermine is bleached with sulphur. Take one part of sulphur, blend with methyl chloride and you get methyl mercaptan, or a heaping serving of genuine skunk odor!

The storage company paid. •

No sport like motorcycling.. No satisfaction like owning a

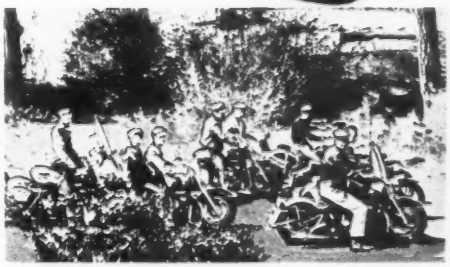
HARLEY-DAVIDSON

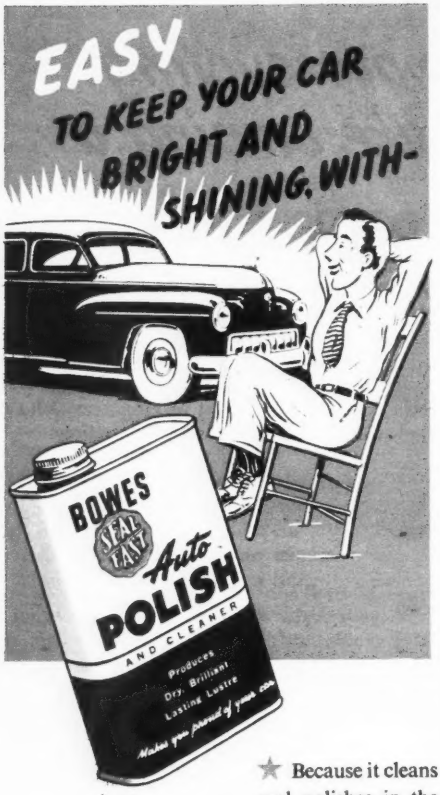
HYDRA-GLIDE ®

That's right, Mister . . . for all-out pleasure, you can't beat the thrill of owning a smooth, powerful Harley-Davidson. Invigorating travel . . . exhilarating good times . . . congenial comrades . . . exciting gypsy tours, race meets, club runs — are all yours to enjoy right from the minute you swing into the saddle of this smooth-riding "streamliner."

See your dealer today. Learn first-hand about the world-famous, power-packed O.H.V. motor with hemispherical combustion chambers; the super-fast foot shift with hand clutch for greater riding pleasure and convenience; the exclusive Hydra-Glide fork that "irons out" bumps and ruts for floating-on-air comfort; the big internal expanding brakes front and rear that assure smooth, positive stopping and other features that put Harley-Davidson in a class by itself as the world's finest motorcycle. Send us 25 cents for literature on the 1952 models, and a copy of the ENTHUSIAST Magazine filled with motorcycle action pictures and stories.

HARLEY-DAVIDSON MOTOR CO.,
Dept. MI, Milwaukee 1, Wis.





★ Because it cleans and polishes in the same operation, it is easy to keep your car clean and shining with BOWES Auto Polish and Cleaner.

In one quick operation you remove dirt and dulling road film and restore original beauty . . . without back-breaking fatigue.

Keep your car clean and shining the easy way, with BOWES Auto Polish and Cleaner . . . and, bear in mind, it will do a good, lasting job.

★ ★ ★ ★ ★

BOWES SHINE CLOTH

Chemically treated, this unusually efficient shine cloth absorbs dust, leaves no oily film to catch more dust . . . and . . . makes your polish and cleaning job last over a long period of time.

Save time and labor with this unusually effective shine cloth.

BOWES SEAL FAST

BOWES "SEAL FAST" CORPORATION
INDIANAPOLIS 7, INDIANA

Cats To Cataclysms

[*Continued from page* 98]

injured last year, suffering a shattered bone at Santa Anita during the running of the San Pasqual handicap, his owner got a Lloyd's check for $250,000.

A Detroit laundryman hit the jackpot with twins and was heartened by a check for $1,000 shortly after. A New Orleans saxophone player suffered facial paralysis after an automobile crash and collected $200,000.

In England, during the last general election, the Liberal Party insured itself against the loss of the deposits it had to put up for its candidates. The law says that if a candidate does not ring up a certain number of votes, the party sponsoring him loses the sum it has posted. Well, Winston Churchill's Conservatives washed out a lot of Liberals, but the party had one consolation—it didn't lose its deposits. Lloyd's paid.

Lloyd's was born in 1689, at the time when Britain's merchant ships were beginning to make their world-famed reputation. In Tower St., a genial tavern-owner named Edward Lloyd played host to London town's more important traders and business men. As an accommodation for his customers, Mr. Lloyd began to gather news of ships reaching and leaving the Thames docks, news from abroad, wrecks and prices of commodities. Soon, the business men began to set up a form of insurance and the tavern was known as a center for marine insurance.

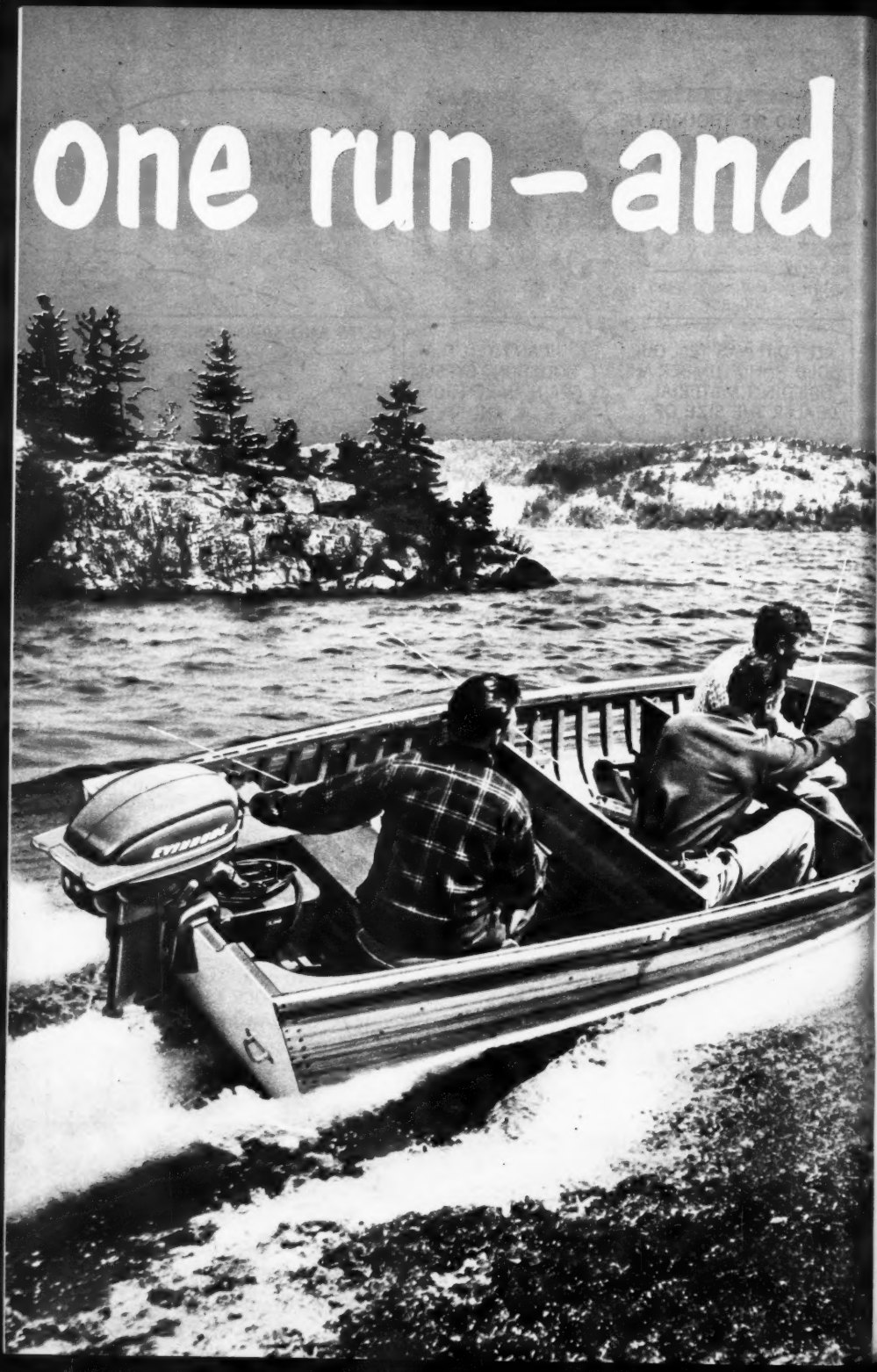
The tavern disappeared from the scene before long, but the merchants and their descendants remained together, moving from place to place, cementing their organization until the world knew that they were one of the most powerful factors in giving Britain's merchant fleet an international reputation for reliability and safety. From just ship insurance, the underwriters branched out to cover the vast variety of risks they do today.

That's the fabled Lloyd's of London, one of the world's unique institution. It's the only place which will peel off $2,000,000 for the loss of an airliner without blinking an eye—and the next minute solemnly consider the application of a male model who wants to insure himself against growing bald.

But how about the famous Lloyd's odds on war? Well, the last policy issued on such an eventuality covered last year. Since that time the War Risk Board of Lloyd's, which meets periodically to change the schedule of premiums as conditions deteriorate and improve, has issued no new schedules. So the same ones stand. Take 'em or leave 'em, the odds on war as quoted by the fabled Lloyd's of London are 50 to 1. •

AND WE THOUGHT HE WAS NUTS WHEN HE BOUGHT THIS SHACK!
BUT WE DIDN'T KNOW ABOUT GOLD BOND GYPSUM GRAINBOARD
JG
ALL I DID WAS TELL OUR GOLD BOND LUMBER AND BUILDING MATERIAL DEALER THE SIZE OF EACH ROOM
I CAN'T TELL THAT GOLD BOND GYPSUM GRAINBOARD FROM REAL KNOTTY PINE!
CUTS AND SAWS EASILY AS WOOD - JUST LIKE THE DEALER TOLD US!
JUST AS STRONG AS WOOD-AND BETTER STILL-IT'S FIREPROOF
THIS IS A CINCH TO APPLY. THE COLORED NAILS THAT THE GOLD BOND DEALER SUPPLIED JUST MATCH THE BOARD
DON'T FORGET WE WANT BLEACHED WALNUT GOLD BOND BOARD IN THE BEDROOMS!
WHEN WE GET BACK TO TOWN LET'S BUILD A RECREATION ROOM IN THE BASEMENT
OK, IF YOU'LL PROMISE TO DO A ROOM WITH GOLD BOND IN OUR UN-FINISHED UPSTAIRS!
TAKE A TIP FROM FUZZY TAIL. SPECIFY TRADE-MARKED GOLD BOND BUILDING PRODUCTS BY NAME. THEY DON'T COST A PENNY MORE THAN UNKNOWN BRANDS!
LOOK FOR GOLD BOND'S ORANGE AND TAN STRIPED LABEL-YOUR ASSURANCE OF TOP QUALITY BUILDING MATERIALS.
ADD-A-ROOM NOW!
with Gold Bond
NATIONAL GYPSUM COMPANY
BUFFALO 2, NEW YORK

one run – and



you *know!*

It's easy to settle on the outboard you want... it's easy ... it's fast... and it's *Fun!* Take a look at the Evinrude that's hustling this "fisherman's express"... *take a run with Big Twin!* Try it!... and you'll never settle for less!

Take over the controls and see for yourself! Start in Neutral and back away... Big Twin's gearshift makes dockside maneuvering simple as handling your car! Shift to Forward—flick the Roto-Matic Control—Big Twin's blazing power smacks your boat to top speed in breathless seconds! You're streaking along at a 30-mile clip—smooth, quiet and steady! Far-off fishing spots are only minutes away... with Big Twin, the run is the biggest part of the fun!

Like trolling? Close your throttle 'way down... you whisper along with bare steerage way... for Big Twin is the 30-miler that trolls like a small motor. On every count... for those who want the last word in fine outboard performance... Big Twin is the motor. *One run—and you know!*

SEE YOUR EVINRUDE DEALER—and get the good news on price... the 25 horsepower* Big Twin is yours at lowest price per horsepower of any outboard motor. If you'd like Big Twin's kind of performance for smaller boats, it's yours in two companion models—the 14 H.P. Fastwin and the Fleetwin, 7.5 H.P.

CATALOG FREE! Write today for big, full-color catalog of the complete Evinrude line!

EVINRUDE MOTORS
4788 N. 27th STREET, MILWAUKEE 16, WIS.
In Canada: Manufactured by Evinrude Motors, Peterborough, Ont.
*Power ratings are O.B.C. certified brake H.P. at 4000 R.P.M.

EVINRUDE

FIRST IN OUTBOARDS . . . 43rd YEAR

RUGGED WORK IN ALASKA! This boat is one of a fleet of more than a thousand gill netters fishing the stormy waters of Bristol Bay, Alaska. Formerly restricted to the use of sail only, the fleet is now being rapidly converted to power. The Evinrude 25 H.P. Big Twin mounted in the stern provides reliable power in toughest going—saves space—save weight—saves cost—and drives this heavily constructed 29-footer at approximately the same speed as a 40 H.P. inboard engine.

MODERNIZE YOUR WALLS WITH BEAUTIFUL, THRIFTY

CONGOWALL

TRADE-MARK ®

Looks—cleans—feels like tile! Easy as A-B-C to apply!

Why waste your time on wall treatments that will soon need refinishing? Gold Seal Congowall is not only easy to apply and inexpensive, but durable, too.

Congowall's baked enamel surface simulates ceramic tile, even to the mortar lines! . . . costs only about 15¢ a square foot . . . yet rivals the performance of wall materials costing several times as much!

Be sure you get the genuine—with the patented duplex backing that's proved successful in over 3,000,000 home installations! The Gold Seal *guarantees* you satisfaction or your money back!

Look for the back-marking that identifies the genuine Gold Seal Congowall!

Half the depth of the backing is moisture resistant—half *will absorb the paste*. Paste becomes part of Congowall, *locks* it to the wall!

MAIL THIS COUPON!

Congoleum-Nairn Inc.
Kearny 3, New Jersey

Please send me the free Congowall color guide and instruction folder.

Name .....

Address .....

City ..... **Zone** ... **State** .....

© 1952, Congoleum-Nairn Inc.

MI Tests The Ford Six

[*Continued from page* 75]

stop light they've got a big surprise coming. I first drove a Ford Six with overhead valves about three years ago and it was as hot as a pot-bellied stove in a New Hampshire general store in zero weather. That model was sent back for reworking. This current job is pure, unadulterated dynamite with a conventional transmission or overdrive. Zero to 60 with just a three-speed conventional transmission averaged 12.3, with one run of 11.9 seconds. It will gobble a half mile from a standing start in 32 seconds flat and has an honest top speed of between 93 and 94, or a good two or three miles faster than the V8 and nearly three seconds faster than the V8 in getting to 60.

The Ford Six with Ford-o-matic reminded me of running an outboard through a lake of molasses in January. Zero to 60 with this contraption took 16.1 seconds, or nearly four seconds longer than with the regular shift. I didn't get a chance to test one with overdrive but I feel it should be a real bomb in the hands of a good driver.

From almost any angle the new Ford Six is a sound buy. It has looks and performance and it should prove trouble-free for some time.

I'll stick my neck out to here and say right now that before 1952 rolls to a stop, this Six will make quite a name for itself in the big-time NASCAR stock car races. I think it will make just as big a hit with the guys who buy cars not for racing but for business and/or pleasure. •

Potatoes Make Dough

[*Continued from page* 80]

little as $1,750 can get started with a Spudnut Shop. For this money, the Peltons furnish a franchise and all the necessary production equipment.

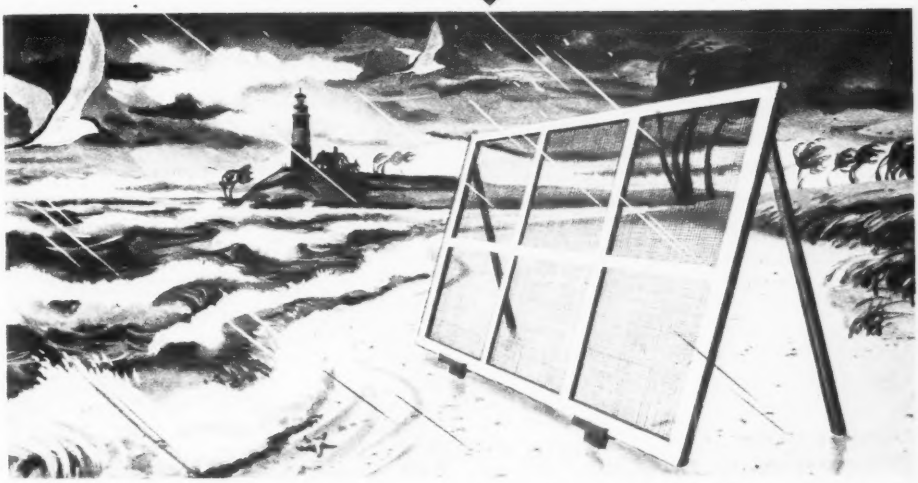
Of course, the new operator must set up and pay for the decoration of his store. On the whole, the average Spudnut Shop costs $5,000 to open up for business.

Included in cost of a franchise is a half ton of mix—ten 100-pound bags, enough to produce 1,680 dozen Spudnuts. With Spudnuts selling at 50c a dozen, this represents $840 of the initial franchise fee back.

There's no stopping the brothers now. And should you ever meet them, remember, don't mention the word doughnut. They abhor it. In fact, they're working on a little deal right now with a guy named Webster—they want to replace the word doughnut with Spudnut in the dictionary. •

Longest Lasting Screening You Can Buy!

Here's proof that LUMITE* Screening outlasts all other kinds!



Can't be beat for durability! In actual comparison tests under the worst exposure conditions, LUMITE saran screening resisted the effects of weather outdoors *better than ALL other kinds of screening!* LUMITE is unharmed by salt air, humidity, city soot and acid smoke. Further tests proved LUMITE has the strength to take harder blows without bulging or breaking than ALL other kinds of screening!

SAVE WORK, MONEY, THESE 3 WAYS!

1. **No painting** or varnishing needed to preserve LUMITE because weather outdoors has practically no effect on LUMITE. Ideal for every exterior use.

2. **No ugly stains** caused by screen rust or other corrosion because LUMITE screening is made, not of metal, but of rustproof, corrosion-proof *saran*.

3. **Fewer repairs,** fewer replacements over the years, because LUMITE lasts longer and is actually more resistant than ALL other kinds of screening.

RUSTPROOF
CORROSION-PROOF

Guaranteed by Good Housekeeping

Free sample and folder. Write: Dept. MI-24, Lumite Division, Chicopee Mills, Inc., 40 Worth Street, New York 13, N. Y.

LUMITE* SARAN SCREENING

*Registered trade-mark

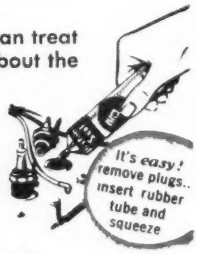
CAR LOST ITS PEP?
BURNING OIL?

Holt's

PISTON SEAL

restores pep and cuts down oil consumption when caused by worn rings.

Yes, its true! You can treat your own car for about the price of a tankful of gas. A mere fraction of what an overhaul job would cost!



Holt's PISTON SEAL forms a self-expanding, pliable lubricating seal around the pistons. One treatment lasts 10,000 miles.

Easy to install. Cannot harm the finest engine. Thousands of satisfied users. Called "penicillin for engines," and "the poor man's friend."

Note:
This is the genuine HOLT'S Piston Seal. Proven quality for 15 years.

WRITE TODAY FOR FREE DETAILS!

R. H. Philbrick, Dept. I-D
220 Miracle Mile, Coral Gables 34, Fla.

Rush free details on PISTON SEAL.

Name.....

Address.....

City..... State.....

Canadians: Write — Treglown, Inc.
1269 Greene Ave., Montreal, Canada

$7 Billion Salesmen

[*Continued from page* 59]

instance, it was estimated recently that about 50 per cent of all the television sets sold in the area were sold by direct salesmen.

Of course, door-to-door selling today does not mean that you have to restrict your efforts to the housewife. The big trend is toward specialization. Many door-to-door salesmen sell only to people who run institutions. Many just visit garage owners. Some call on offices, others on private homes only. Most manufacturers who supply products for door-to-door selling don't care where you're from or even where you're going to sell. They only want to be sure that you're not too bashful to carry their products directly to potential customers.

Like any other business, door-to-door selling has its share of unscrupulous characters. Not so long ago, several door-to-door salesmen got housewives to open doors for them by pretending they were taking a survey. Once inside the door, the salesman would ask a few innocent questions on a dummy form, then he would proceed to sell his own products. You can imagine how much this angered housewives.

Recent war talk has even made it possible for some salesmen to capitalize on the gullibility of people. One such salesman was arrested last year in Los Angeles for selling "anti-atom-bomb" lotion. It turned out to be nothing more than a smooth, homemade mixture of water and cold cream, for which he was getting $2.49 for half a pint. It cost him six cents to make.

Other unscrupulous salesmen talked people into buying special clothing for protection against the effects of an atomic explosion. Such clothing, of course, doesn't exist.

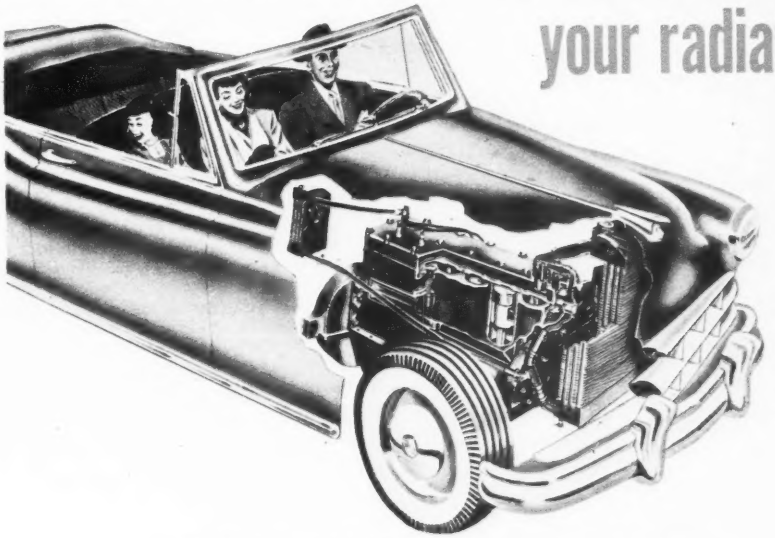
Then, of course, there was the recent example of the inflammable brushed-rayon sweaters which burst into flame easily and caused many injuries to innocent purchasers.

However, through the vigilant efforts of such famous policing organizations as the Better Business Bureau, door-to-door selling is as clean a profession as you can expect to find in any form of business. Perhaps that's why it is becoming more and more a growing opportunity for ambitious inventors to get their own brainstorms on the market.

There's probably no better living example of this than Ray Lee who astounded the cosmetic industry and started his own revolution in the home permanent wave business. Back in the '30s, when he left college full of optimism only to run smack into America's worst depression, he had a clever home

[*Continued on page* 171]

It's time to DRAIN OUT and CLEAN OUT your radiator



Enjoy trouble-free summer driving... remove rust and avoid overheating with

DU PONT Cooling System CLEANSER

Hot weather makes auto cooling systems work twice as hard . . . makes overheating more likely. But you can guard against this annoying problem *right now*, when you drain out anti-freeze—by removing rust with Du Pont Cleanser. Du Pont Cleanser makes the job safe, thorough, and simple. It will even do its work while you're driving. And neutralizer is included in the can for a complete job. There's no fuss, *no reverse flushing necessary!* Ask for a can at your auto supply store or service station today, or ask your service station about Du Pont's "Drain Out" service.

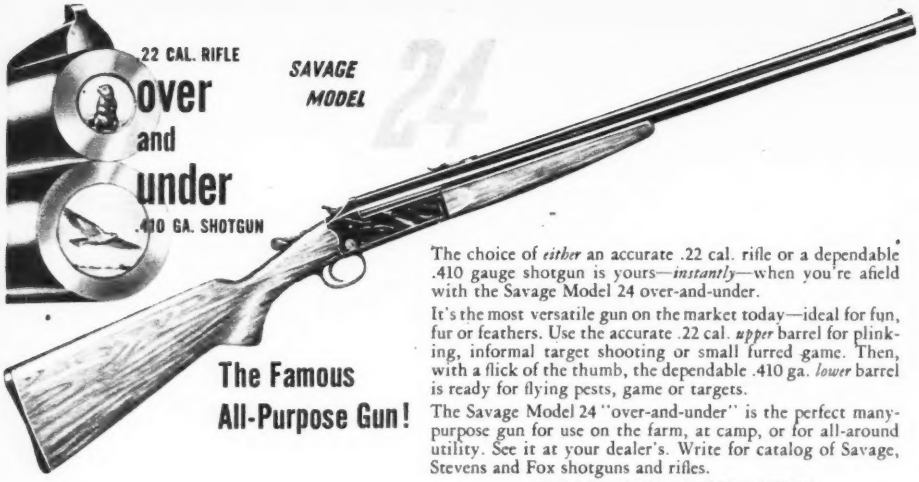
After cleaning keep rust out for good with

DU PONT ACID and RUST INHIBITOR

When your cooling system has been cleaned out, it's wise to guard against rust formation in the future. You can keep your radiator free from rust all season long simply by pouring in a can of **Du Pont Acid and Rust Inhibitor.** It's harmless to hose and metal parts . . . retards rust formation and neutralizes acids.

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



The Famous All-Purpose Gun!

The choice of *either* an accurate .22 cal. rifle or a dependable .410 gauge shotgun is yours—*instantly*—when you're afield with the Savage Model 24 over-and-under.

It's the most versatile gun on the market today—ideal for fun, fur or feathers. Use the accurate .22 cal. *upper* barrel for plinking, informal target shooting or small furred game. Then, with a flick of the thumb, the dependable .410 ga. *lower* barrel is ready for flying pests, game or targets.

The Savage Model 24 "over-and-under" is the perfect many-purpose gun for use on the farm, at camp, or for all-around utility. See it at your dealer's. Write for catalog of Savage, Stevens and Fox shotguns and rifles.

SAVAGE ARMS CORPORATION
Firearms Division Chicopee Falls, Mass.

A lightweight, rugged, many-purpose over-and-under gun. Upper barrel shoots all .22 cal. rimfire cartridges; lower barrel, .410 shot shells. Single trigger. Single sighting plane. Selector button permits instant choice of either barrel. Two-way top opening lever. Walnut stock. Takedown.

First in the Field

SAVAGE

SAVAGE · STEVENS · FOX *Rifles and Shotguns*

SAVAGE · WORCESTER *Power and Hand Lawn Mowers*

DO IT TODAY! SWITCH TO

MILD

KENTUCKY CLUB

"Look! Another man switched to Kentucky Club—the thoroughbred of pipe tobaccos."

Notice how much better your pipe tastes—how much fresher your mouth feels when you switch to Kentucky Club. Look for the blue tin with the picture of the red-coated rider. Send for free catalog showing fine pipes and how to get them at big savings. Mail Pouch Tobacco Co., Wheeling, West Va. Dept. 86

$7 Billion Salesmen

[*Continued from page* 168]

permanent wave invention up his sleeve. That's where it would have stayed if he had relied on a backer to market the product for him. Instead, Ray bought himself a battered Ford for $50, cashed a $400 insurance policy and went from house to house ringing doorbells to sell his own product.

That was enough to get him started. Business grew so fast that Ray hired a chemist and opened his own small plant. But by this time others were trying to horn in on his invention and he was kept busy fighting law suits to protect his patent. Meanwhile, he took in a partner and went to work dreaming up new ideas while business just continued to climb. It wasn't long before he was able to sell out his 83 per cent interest in the business for $600,000. That was a slight mistake, though; shortly afterward, his partner sold out for $20,000,000. But Ray is not worried. Having gotten the start he needed, thanks to door-to-door selling, today at 41 he is financially independent and associated with John Roosevelt in a brand new home permanent wave business.

Probably the best known firm selling in the door-to-door field is Fuller Brush. Even before Hollywood deemed it a good idea recently to make two movies about the Fuller Brush man and his feminine counterpart who sells cosmetics, the company was said to be raking in more than $33,000,000 a year. Unofficial estimates for 1951 put the total closer to $60,000,000.

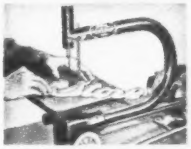
There are over 17,000 Fuller dealers, as the men and women who sell the products are called. About 7,000 sell brushes and about 10,000 are cosmetic dealers or Fullettes. And although the majority of Fuller dealers have had no previous selling experience, they manage to average close to $100 per week. It's been the experience of the company that anyone of good character, good appearance, with a reputable product to sell and a willingness to work can sell successfully. The law of averages works in favor of the salesman, they say —if you ring enough doorbells, you'll sell enough products. Last year, many Fuller dealers netted $7,000 or better with the top earners making about $15,000. And according to President A. Howard Fuller, dealer earnings will probably increase 20 per cent this year.

Outfits like Fuller Brush have been known to provide door-to-door salesmen with excellent training for going out on their own. There's Stanley Beveridge, for example, founder of Stanley Home Products. He started

[*Continued on page* 177]

Greatest Jig Saw Value OF ALL—

ONLY $18.50! F.O.B. KALAMAZOO



If you've ever wanted fast, *accurate* jig sawing for your shop — at *low cost* — here it is!

This is not a toy! It cuts wood up to 2¾" thick, plastics, light metals. 9" x 9" *grey-iron* table is *precision-ground.* Splash lubrication, automotive type bearings, ground steel spindle! See it at your Atlas dealers, or send coupon for catalog.

SEND FOR FREE CATALOG

Please send your Workshop tool catalog, showing 13" Jig Saw and other tools.

Name_____

Address_____

City_____ State_____

Atlas ATLAS PRESS COMPANY
452 N. Pitcher St., Kalamazoo, Mich.

"Stand by with the 'DUCO' CEMENT!"

Fix it for keeps WITH DU PONT DUCO CEMENT

REG. U.S. PAT. OFF.

CHIPPED KEYS strike a sour note in a piano's appearance. Mend broken keys with "Duco" Cement.

TORN WALL-PAPER needn't be a household catastrophe. Just mend it like new with "Duco" Cement.

NAMEPLATES IN OVERSHOES prevent mixups in the school coatroom. Put them in with "Duco" Cement.

REPAIR CHIPPED GLASS "Duco" Cement's transparency makes the repair simple and neat —almost invisible.

STRONG, TRANSPARENT FLEXIBLE, WATERPROOF

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

HOLLOW GROUND Hand Saw

World's First and Only Saw Blade That Has Maximum Clearance WHERE YOU NEED IT MOST!

The ONLY BLADE with full clearance in the **WORKING AREA**

Pat. Pending

For the easiest, fastest, smoothest sawing action known, get a hollow ground saw!

FREE Valuable tips on easier sawing, and hints on saw care. New folder shows amazing advantages of *hollow ground* hand saws over ordinary taper-ground saws. Send for *free copy* today.

THEY COST NO MORE!

Sold thru dealers only

The **LARSAN** Mfg. Co. 29 South 11th St., Newark, Ohio

get new 1952 catalog

IMPROVED boat designs! Assure better performance with oars or motors up to 33 h. p. Safe, durable, lightweight. Choice of sizes. Low prices.

STARCRAFT STAR METAL BOAT COMPANY

Dept. T-4. Goshen, Ind. **METAL BOATS**

ONE-MAN SAWMILL LOW AS $50.00 DOWN

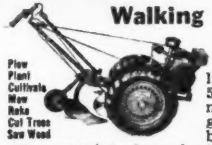
Take BELSAW Portable Sawmill right to the trees—turn out valuable lumber for local yards—do "custom sawing" for neighbors. BELSAW lasts a lifetime. No crew needed. Power with old auto engine. Beginners get excellent results. Send postcard for FREE BOOK, "How To Make Lumber."

FREE BOOK

BELSAW MACHINERY CO.
8347 Field Bldg. Kansas City 2, Mo.

DO IT EASIER---FASTER---BETTER with a SHAW DU-ALL

Walking or Riding Tractor



1½, 2½, 3 and 5 H.P. walking tractors for all large and small gardening. 5, 8 and 12 H.P. riding models that will handle good sized farms. Quality built for nearly 50 years. All wanted tools and attachments. See the Shaw dealer. Write for ***FREE CATALOGS***, low prices on complete Shaw line. Address

SHAW MANUFACTURING CO.
2904 Front St., Galesburg, Kansas
668-ME N. 4th St., Columbus, Ohio

MARFAK

—S-T-R-E-T-C-H-E-S—

—HOLDS TOGETHER

To prove how *Marfak* holds together, clings and stretches, this famous "Stretch Test" is the clincher. An ordinary lubricant would fall apart. This test shows that tough, tenacious *Marfak* won't work out of bearings. It stays put, protecting points of wear and friction far longer. As a result, *Marfak* chassis lubrication lasts for 1,000 miles or more – gives you "cushiony" driving from one lubrication job to the next. Drive in for *Marfak* lubrication today! See your Texaco Dealer, *the best friend your car ever had.*

MARFAK Lubrication

TEXACO

THE TEXAS COMPANY

TEXACO DEALERS IN ALL 48 STATES

Texaco Products are also distributed in Canada and in Latin America

Faithfully yours 50 *for Fifty Years*

TUNE IN . . . TEXACO STAR THEATER starring **MILTON BERLE** on television every Tuesday night. **METROPOLITAN OPERA** radio broadcasts every Saturday afternoon. See newspaper for time and station.

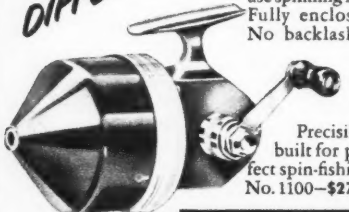
FREE!

NEW BOOK *for Fishermen*

● Every angler needs the new '52 edition of "Fishing—What Tackle and When." Over 100 pages of fishing tips and instructions—Skish rules—fish pictures and records—new rods, reels, lines, lures. *Write now.* FREE!

NEW! DIFFERENT!

SPINCAST® REEL . . . . . The simpler-to-use spinning reel! Fully enclosed. No backlashes.



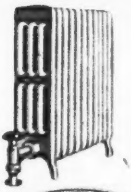
Precision-built for perfect spin-fishing. No. 1100—**$27.50**

SOUTH BEND BAIT CO.
890 High Street
South Bend 23, Indiana

SOUTH BEND
A Name Famous in Fishing

FILL HOLES AROUND PIPES

EASY! Handles like putty..., hardens into wood. Wonderful for sealing holes around pipes to prevent dust, drafts, bugs, mice from coming through. Has dozens of uses all through the house.



PLASTIC WOOD®

A CELLULOSE FIBRE FILLER

IN CANS OR TUBES

P.S. Pulleys, hinges, locks and latches work better with **3-IN-ONE Oil**

POWER MOWERS & KITS

FREE PLANS

LOW FACTORY PRICES DIRECT TO YOU

Build your own quality mower with our LOW COST KITS. Parts, Engines. Free Plans guide you. 3 and 4 Wheel Kits, complete. Parts precision finished, ready to use. Write TODAY, for Free Plans, Low Prices, Parts List and Guarantee.

3-WHEEL KIT NO. T-800

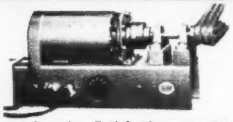
America's Finest Power Mowers completely assembled in 3 and 4 wheel models. Belt or direct drive. 18" and 20" sizes. Nationally known make engine. Latest improved features, sturdy construction and money back guarantee fully described in color folder. Write today.

▼ **TRIANGLE MANUFACTURING CO., Box A-9, Fort Scott, Kansas**

COMPARE THIS !! $39.95

300 AMP.-D.C.-WELDER KIT
ASSEMBLE YOUR OWN – SAVE HALF!

NEVER BEFORE AT SUCH AN UNBELIEVABLE LOW PRICE!



Now you can make your own welder using any aircraft generator and save many dollars. Only a pair of pliers and a few minutes are needed to assemble this kit into a sturdy welder giving you many years of useful service. Satisfaction guaranteed.

HERE'S WHAT YOU GET:

No. AW5-Kit includes these ten parts: (1) special hook-up leads (2) amperage control with leads (3) Hi-Lo switch (4) mounting plate (5) pillow bearings (6) bearing supports (7) shaft extension (8) flexible coupling splined to fit your generator (9) triple groove "B" type pulley (10) complete assembly plan.

No. AW5-Kit Complete **$39.95**
No. AW6-Kit includes **AW5-Kit plus Arc Stabilizer** **$49.95**
No. AW9-Kit includes **AW6-Kit plus P-1-200 Amp. Generator (250 amp. short welding periods)** **$67.90**
(P-1-200 Amp. Generator Cost Govt. Approx. $200.00)

EXTRA! A **$15.95** Accessory Kit Complete for only **$12.95!** Includes Welding Helmet, Electrode Holder, 5 lbs. Ass't Rods, Two 10 ft. Welding Leads with Terminals and ground clips, plus Audel's Welding Guide. **Sold with any Welder Kit. Special Price $12.95**

PLANS 35c LeJay's proven plan for building your own Welder using aircraft generator. Catalog included.

Order Direct from This Ad

FREE! Big New Catalog of Electrical Bargains—Write for it!

LEJAY MFG. CO. 914 LEJAY BUILDING MINNEAPOLIS 8, MINN.

Print Your Own

Cards, Stationery, Advertising, labels, circulars, photo and movie titles, church work, tags, etc. Save money. Sold direct from factory only. Raised printing like engraving, too. **Print for Others. Good Profit. Have a home print shop.** Easy rules supplied. Pays for itself in a short time. Write for free catalog of outfits and all details.

KELSEY PRESSES, 5-9, Meriden, Conn.

NEW 1952 KING MIDGET AUTO

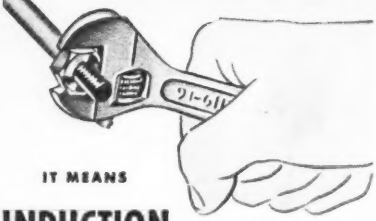
World's Lowest Priced 2 Passenger Car

Drive it for 75c per week. Amazing performance. Surprising comfort. All steel construction. Full accessories, top and heater. Ready to run or assemble it with our bolt together parts. Rider agents wanted, earn your car Free. Send 25c for detailed literature or $1 (refunded first order) for actual assembly book and service manual filled with photos, drawings, specifications, etc.

MIDGET MOTORS MFG. CO.
ATHENS, OHIO

THIS ONE-TWO PUNCH
adds power—pep—miles
in auto performance!
• K.O.'s top-cylinder wear
• Frees sticky valves
• Defeats gum formations
• Provides ring seal
1 MARVEL INVERSE OILER
Tested and proven through years of scientific research. Now available in one quart model. Visible oil reservoir feeds oil automatically in proportion to engine needs direct to upper cylinder area. Install a Marvel Inverse Oiler for better motor performance, longer engine life . . . more engine-hours per dollar!
2 MARVEL MYSTERY OIL
A specially developed top cylinder oil for today's high compression engines. Ideal for use with hydraulic valves. Contains no ingredients or graphites harmful to engines. All-around lubricating action insures smoother, carefree driving . . . protects and adds years to the life of your car.
Be engine wise . . . Marvelize NOW!
MARVEL MYSTERY OIL
For detailed information, ask your dealer or write:
EMEROL
MANUFACTURING CO.
DEPT. 236, 242 West 69th St.,
New York 23, N. Y.

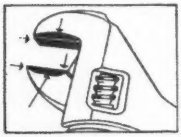
LOOK FOR THE NAME **UTICA**



IT MEANS

INDUCTION HARDENED WRENCH JAWS

Ordinary adjustable wrenches, subject to hard usage, burr over at the jaw edges. UTICA's process hardens the jaws in just these *vital* areas (indicated by arrows). Tests show that UTICA's last up to 10 times as long as ordinary adjustable wrenches.



Dark areas are induction hardened for longer wear.

Your hardware dealer has UTICA adjustable wrenches or can get them for you. Insist on UTICA — the longer lasting adjustable wrench.

U TI CA

DROP FORGE AND TOOL CORPORATION

UTICA 4 NEW YORK

IT PAYS TO BUY QUALITY TOOLS

and the world's best tools are made in U.S.A.

SAVE 50% - THOUSANDS HAVE ASSEMBLED

$42 UP PACKAGED BOAT KITS

27 MODELS

Dinghies, skiffs, racers, inboards, outboards and cruisers. Assemble your own boat, it's easy, it's fun! All parts pre-cut or prefabricated from finest materials. Get all the facts from our big 24 page catalog. See how Packaged Boats are built, how they perform, how exclusive construction features make assembly easy. Includes specifications, performance data plus hardware and paints.

SEND 25¢ for NEW 24 PAGE CATALOG

CUSTOM-CRAFT - DEPT. 9 - BUFFALO 7, N. Y.

BOAT PLANS PATTERNS

▶ Over 50 modern plans and full size patterns. Racing classes, cruisers, inboards, outboards, sail boats. By famous designers. 6' to 30'. DESIGN CATALOG 35¢. Design Catalog and boat building handbook, $1.00

MARINE MART - DEPT. 9 - BUFFALO 7, N. Y.

NEW Indian "Eighty" CHIEF!

- SPEED!
- STAMINA!
- SURGING POWER!

OVER 100 M.P.H. PERFORMANCE!

For details write Indian SPRINGFIELD, MASS.

BUILD YOUR OWN **ARC·WELDER** NO REWINDING NECESSARY

For Light or Heavy Work

We show you how to build this NEW Powerful welder without rewinding. Uses coils taken from old auto generator. Has 20 heats. Operates on either 110 or 220 volts A. C. Learn to weld. Make money welding for others. Complete plan and valuable catalog 35¢.

LEJAY MFG. CO. 3314 LeJay Bldg. Minneapolis, Minnesota

Experts' Painting Tips - FREE

Lifetime of experience with aluminum paint, yours free—write for free 24-page illustrated book. Tells how to buy and apply right kinds of aluminum paint. We don't make paint but have prepared this to help you get best results. Just write for "Paint it Bright."

ALUMINUM COMPANY OF AMERICA, 1719D GULF BLDG., PITTSBURGH 19, PA.

HULA POPPER • GETS BIG BASS

Surface popping lure. Ideal combination of noise, action, casting and hooking qualities. Pops, plunks, jerks, twitches — obeys your slightest wrist command. Rubber Hula Skirt imitates live bug. At your dealer 5/8 oz. or 1/4 oz., $1.25. Fly rod size, 75c.

FRED ARBOGAST & Co., Inc., 1854 W. North St., Akron 3, Ohio

FREE WRITE TODAY FOR YOUR BIG FREE ARBOGAST COLOR CATALOG—FULL OF PICTURES OF CATCHES

DUAL CARBURETION FOR ALL CARS

POWER • SPEED • ECONOMY

Written up in leading magazines! New Dual Manifold Unit for installing two carburetors. Increases acceleration and power up to 20%. Steps up efficiency—eliminates fade outs! Easy to Install. Developed on hot rod track.

For ALL passenger Cars—Ford, Chev., Ply., etc. Complete $12.95

"SOUP UP YOUR CAR"

Famous book shows how to get racing performance—More power & gas mileage! Includes Big "SPEED EQUIPMENT CATALOG" showing hundreds of bargains, Racing Cams, Dual Manifolds, Hi-Compression Heads, Chrome parts, Hollywood Accessories, etc. ....SEND ONLY 25c

HOT ROD Digest "Hop Up Tips"

ALMQUIST ENGINEERING & MFG. Milford 46X, Pa. (Dealers Wanted)

$7 Billion Salesmen

[*Continued from page* 171]

with Fuller Brush. Now, his own company is reported to have grossed $35,000,000 in 1950. While he undoubtedly got a lot of ideas from his job with Fuller Brush, Beveridge can claim a unique twist or two of his own.

Instead of getting full-time salesmen to work for him, he concentrated on taking on part-time dealers, mostly men who could work sparetime evenings only. Instead of just traveling from door to door, a Stanley Home Products man gets a housewife to use her own apartment or house for a gathering of neighbors and demonstrates his products to all at the same time. As an inducement, the housewife gets a special gift, depending on the total sales for the evening. Today, there are about 16,000 such dealers working for Stanley. Sooner or later any of them may strike out on his own with a brand new idea for door-to-door selling—just as Beveridge did.

Generally, you can get started in door-to-door selling in two ways: you can buy or make your own products, establish your own route, set your own margin of profit, do some advertising and start ringing doorbells; or you can get in touch with a company that sells in the door-to-door field and ask to be appointed to their sales staff.

In the latter case, it doesn't matter where you live because most firms will supply you with sample selling kits. And usually it doesn't matter that you may already have a full-time job because by acting as a representative of the company, your income is based on commissions and you can work whenever you please.

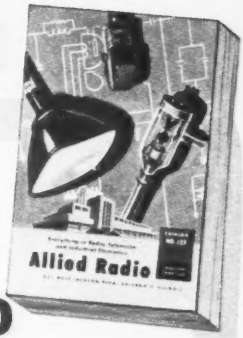
But wherever you operate, don't make the mistake of calling yourself a door-to-door salesman. If you do any advertising in the local newspaper or if you print up your own calling cards, refer to yourself by the more dignified title of sales distributor or factory representative, which, indeed, is what a door-to-door salesman actually is.

Probably the best instruction you can get in door-to-door selling comes from experience. And for some it can be tough. A few years ago the *New York Post* hired 3,000 men in a special campaign to sell encyclopedias from door to door around New York City. After three years, only 32 of the original number stuck to the job.

Successful door-to-door selling, however, is only beginning to be recognized. *Barron's*, a leading financial weekly newspaper, points out a recent report in which average annual earnings of door-to-door salesmen were said to range from $6,000 to $20,000 a year. Many,

[*Continued on page* 179]

FREE



★

1952 ALLIED RADIO & TV CATALOG

EVERYTHING IN RADIO AND TV AT LOWEST PRICES!

SEND FOR IT

212 PAGES Value-Packed

Everything for Experimenters, Builders, Amateurs, Servicemen, Engineers, Soundmen...

Save money on every Radio and TV need! Get the big 212-page 1952 ALLIED Catalog featuring the world's largest selections of top-quality electronic equipment at lowest, money-saving prices. See the latest in TV, home radios, Amateur equipment, P.A. systems and Hi-Fidelity custom sound, recorders, test instruments, builders' kits—plus thousands of parts, tools, books and diagrams. Get more for your money from the World's Largest Radio Supply House. Send today for your FREE 1952 ALLIED Catalog!

FREE CATALOG ***SEND FOR IT TODAY***

ALLIED RADIO

ALLIED RADIO CORP., Dept. 6-D-2
833 W. Jackson Blvd., Chicago 7, Ill.

☐ Rush FREE 1952 ALLIED 212-Page Catalog

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

BE YOUR OWN BOSS! *Big Money* waiting for you today in floor surfacing! Hundreds of prospects near you! The floor next door may be your first job—and business mushrooms as folks tell others. Earn as high as $50 and more a day sanding floors with an easy-to-run American Machine. Pleasant indoor work—steady the year round. A sound opportunity to get in something for yourself and be *your own boss!* No schooling—no experience needed. Only small investment in sander gets you started to success! Send coupon for "money-making booklet" entitled "Opportunities in Floor Surfacing"—enclose 25c in coin or stamps to cover handling.

AMERICAN FLOOR MACHINES

SEND!

The American Floor Surfacing Machine Co.
531 So. St. Clair St.
Toledo 3, Ohio

Enclosed find 25c in stamps or coin for booklet "Opportunities in Floor Surfacing", telling me how I can start my own floor sanding business.

Name.....

Street.....

City.....State.....

BUILD YOUR OWN POWER TOOLS— TILT/ARBOR SAW · BANDSAW · BELT SANDER · SAVE $50. OR MORE

TILT/ARBOR SAW

• 27x28 in. table stays level. Blade tilts full 45 degrees. • 10 in. blade cuts 3¼ in. deep, jack-screw depth adjustment. • Floor model, 34 in. table height. • New Departure ball bearing arbor, ⅝ in. precision shaft, ready to run, ⅝ in. bore blades. • Quick positioning, self-aligning rip fence guide. • Sturdy wood, steel and aluminum construction. • No machining—build easily with hand tools only. • Capacity and performance of floor saws selling for $150.00 and up! GIL-BILT Metal Parts Kit, includes Plans, ball-bearing arbor, cast aluminum miter gauge and bar, rip fence guide, machined lock knobs, jackscrew mechanism with 4½ in. hand-wheel, and all other metal parts (less blade) $20.95
Same Kit with 10" combination blade 24.90
Same Kit with 8" combination blade 23.90
If not satisfied, return Kits in 10 days for refund of purchase price.

(Prices include postage up to 300 miles. Over 300 add 5%)

GIL-BILT Step-by-Step pictorial plans (No blue-print reading required), full scale patterns, actual photographs for above 10" TILT-ARBOR SAW, 12" BAND SAW, BELT SANDER, 8" TILT/TABLE SAW $1.00 each, postpaid anywhere in the world. ALL 4 Plans for $3.00, or write for FREE descriptive catalog.

COMPLETE PLANS *only* $1.00 EACH

GILLIOM POWER TOOLS P. O. Box 1-RD, Lambert Field, St. Louis 21, Missouri

New POWER MOWER

FREE Building Instructions Write For Them

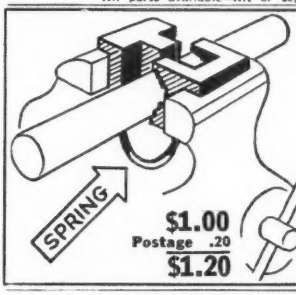
Amazing invention makes whirl-blade mower pull and steer itself as well as cut grass and weeds. Convert your mower or build a complete mower with screw-driver & pliers. Send name and address. 1c postcard will do.

PULLS ITSELF, STEERS ITSELF

Convert Your Mower Or Build A New One

T & H Mfg. Co., Dept. 412, 811 E. 31 St., Kans. City, Mo.

Spindle—Platform—Wheels—Fork—Handles—Driving & Steering Parts
All parts available—Kit or separately.



ROUND STOCK OR PIPE JAW For Your Vise

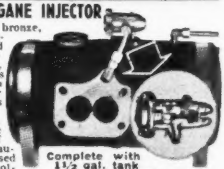
$1.00
Postage .20
$1.20

H. A. JOHNSON
3921-I LaCresta Ave.
Oakland 2, Cal.

BURN WATER IN YOUR CAR

With The OCTA-GANE INJECTOR

This amazing all bronze, "fog type", exhaust operated PRESSURE injector will burn water, alcohol or both. It is adjustable to burn up to one gallon of water with every 10 gallons of gasoline.
U.S. Agricultural Dept. Scientists say: "The gasoline mileage of new high compression auto engines can be increased up to 30% with alcohol-water-gasoline fuels."



Complete with 1½ gal. tank
Only $27.45 ppd.
(Or send $2, balance C.O.D.)
List car make, year, # cyl.

DEALER INQUIRIES INVITED

WRITE FOR FREE ILLUSTRATED LITERATURE

World's Largest Firm Specializing in Hi-Performance and Hi-Mileage Equipment for All Makes of Cars.

NEWHOUSE AUTOMOTIVE INDUSTRIES
Dept. C-4, 5805 E. Beverly Blvd., Los Angeles 22, Calif.

$7 Billion Salesmen

[*Continued from page* 177]

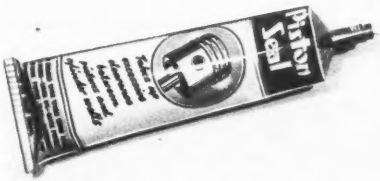
the report said, earn much more than that but don't make their full earnings known to the public for fear of competition.

Earl A. Lifshey, a famous newspaper columnist in the retailing trade, once set out to do a brief article on door-to-door selling. That was three years ago. He ended up taking a nationwide tour, interviewing more than 200 leading members of the door-to-door selling industry and writing a book because the subject turned out to be bigger than even he had ever suspected. Today, his book *Door-to-Door Selling,* published by Fairchild Publications in New York, contains a complete history of successful door-to-door selling. The book is practically considered a Bible in the direct-selling industry and lists the firms concentrating their products and efforts in the door-to-door field.

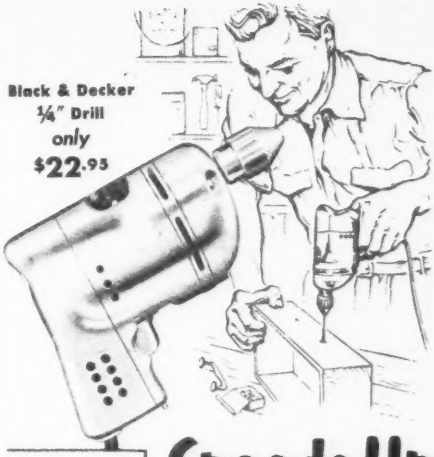
Often businesses not engaged in direct sales don't understand the true power of door-to-door selling. In 1947 someone brought it to the attention of the Western Auto Supply Co. and the company decided to give that kind of selling a try. By 1950, adding up its door-to-door figures along with regular sales, it reported a gross of $65,400,000, five times as great as any previous peak figure without door-to-door selling!

Chances are, as an individual, you won't do quite as well. It takes a lot of time to get a decent-sized company rolling. But if you can ring doorbells and enjoy the gift of gab, there's no reason why you can't talk yourself into a sizeable income. •

Compression Saver



Here's a real "wonder drug" for your auto engine. If your cylinders are worn and you're burning oil, use Piston Seal. Manufacturer claims it restores compression. One dose lasts 10,000 miles. Just remove your spark plugs, and squeeze compound into each cylinder. R. H. Philbrick, Coral Gables, Fla.



Speeds Up Drilling— and plenty more!

THIS HANDY Black & Decker ¼" Electric Drill is so versatile it drives many accessories to handle job after job. So speedy and easy-to-handle it helps you do more work in your spare time. So well-built it gives you trouble-free performance year after year. So down to earth in price you can't afford to be without it. No wonder well over a million have been sold!

Try a B&D ¼" Drill and accessories today at your hardware, appliance or department store. It's its own best salesman! THE BLACK & DECKER MFG. Co., Dept. H4X, Towson 4, Maryland.

Black & Decker

UTILITY TOOLS

PORTABLE ELECTRIC TOOLS

Drills • Sander-Polishers • Saws • Kits

22 CALIBER

CARBINES

SMALL PRICE

BIG VALUE

That's the quick story of Mossberg's two fast-handling, 7-shot, 5 lb., 22 caliber carbines. They shoot with the best of them. And note hinged forend, which serves as hand grip or ground support. Choice of bolt action repeater or automatic, both with clip-type magazine.

YOUR MOSSBERG DEALER WANTS TO SHOW YOU THESE

Just see how much quality Mossberg gives you for so little!

Model #142 (BOLT ACTION) $23.95
($24.95 West of Rockies)

Model #152 (AUTOMATIC) $29.95
($30.95 West of Rockies)

Both above with peep sight

Model #152K ... *Same prices as #152, but with OPEN SIGHTS*

JOIN A GUN CLUB
Organized shooting is loads of fun—and you'll find the nicest folks in town are members.

O. F. Mossberg & SONS INC.

Send for **FREE** *catalog*
No sales at factory

28904 St. John St., New Haven 5, Conn.

EVERY ¼" ELECTRIC DRILL A PORTABLE SAW IN ONE MINUTE!

NEW! No. 445 "ARCO-SAW" for DEPTH & BEVEL CUTS

At Better Hardware Stores Everywhere

11.50 with all GAGES & 4" "HYCARBON" Crosscut Blade.

CAN BE USED WITH ONE HAND!

"ARCO-SAW" works like a high priced Portable Saw. RIGHT ANGLE GEAR DRIVE eliminates clumsy, dangerous direct drive with drill sideways.

CUTS 1¼" or 2x4 by turning over

Depth gage graduated from 0 to 1¼" depth (for grooves, dadoes), Bevel gage graduated from 0 to 45° angle (for dovetails, bevels), Rip gage with sideways adjustment. Visual guide with adjustment to follow lines on both straight and bevel cutting. 90-DAY FACTORY GUARANTEE.

UNCONDITIONAL 10-DAY MONEY BACK GUARANTEE

No. 444 "ARCO-SAW", same as above—less gages. Has accurate visual guide ----- 9.95
No. 444G Depth-Bevel-Rip Gage. Easily attaches to any No. 444 "ARCO-SAW" ---------- 1.95
Extra "HYCARBON" Blades, 4" Crosscut or 4" Combination 1.60

OVER 100,000 SOLD — ARCO SAW

ORDER TODAY at your dealer or send us check or M.O. (Postpaid). C.O.D.'s—postage extra.

DEALERS—Write for nearest jobber.

ARROW METAL PRODUCTS CO.
Dept. MI-4, 140 West Broadway, N.Y. 13, N. Y.

Build your own JET ENGINE!

SEND NO MONEY

Order these plans today

1. JET PROPELLED BICYCLE. Assemble your own. Photo and instructions $1.00.
2. HOW TO MAKE EXPERIMENTAL JET ENGINES. Seven sheets drawings with information and instructions $2.95.
3. BOTH OF ABOVE in one order $3.75. SEND NO MONEY. Order both at once $3.75 C.O.D. in USA plus c.o.d. postage. Send check or Money Order and we pay postage. Get other information too. Rush Order.

J. HOUSTON MAUPIN, Dept. 88, Tipp City, Ohio

OWN a Business

If employed, start part time. Alert dealers can gross $5 hourly profit on own service plus $3 on EACH serviceman. Clean, revive, mothproof rugs & upholstery on location. No shop needed. Services nationally advertised. Repeat customers. Easy to learn. Quickly established. Easy terms. Send today for FREE booklet. No obligation.

DURACLEAN CO., 2-174 Duraclean Bldg., Deerfield, Ill.

make your own Gems 29.50 F.O.B.

All necessary lapidary equipment is furnished, including a super-charged diamond blade for sawing, and all wheels for grinding, shaping and polishing; also complete instructions. The complete equipment as shown, less motor and belt, for only $29.50, f.o.b., Burlington, Wisconsin. Write today for information and literature.

B&I MANUFACTURING CO.
Dept. E, Burlington, Wis.

QUALITY AT LOW COST **SHOP ACCESSORIES** FULLY GUARANTEED

Saw Blades
CHROME : NICKEL : MOLY STEEL
1/2-5/8-3/4" ARBOR

FLAT GROUND
RIP • CROSSCUT • REGULAR OR NOVELTY COMBINATION
6" dia. $1.68 | 8" dia. $2.39
7" dia. $2.18 | 10" dia. $3.18

HOLLOW GROUND
MITER OR PLANER BLADES
6" dia. $2.75 | 8" dia. $3.85
7" dia. $3.19 | 10" dia. $4.80

You'll Want This Book
SEND FOR IT TODAY!
32 PAGES on use of saws, dadoes, moulding head, sanding discs. OVER 100 photographic illustrations. Only 50c

SHAPER HEADS
FOR YOUR TABLE SAW
1/2-5/8-3/4" ARBOR
Only $4.50

MOULDING CUTTERS only $3.85 per set
CHOICE OF 38 PATTERNS

6 IN. DADO HEADS
CHROME : NICKEL : MOLY STEEL
1/2-5/8-3/4" ARBOR
Cuts 1/8 to 13/16" in steps of 1/16"
2 Hollow Ground Blades
3 Inside Chippers
Only $9.95

8 IN. SANDING DISCS
FOR YOUR TABLE SAW
1/2-5/8-3/4" ARB
1 coarse, 1 fine grit on each side
Only $4.95

EXTRA SANDPAPER 5 grits 80c
SANDING DISC CEMENT only 40c

SEND CHECK OR M. O. All prices prepaid—WRITE FOR FREE CATALOG M- 4

JAXON COMPANY • 369 ELLICOTT ST. • BUFFALO 3, N.Y.

Don't struggle with screws

PUSH 'EM IN

with the YANKEE Handyman Driver No. 133H

Push the handle and the screw spins in. Up with your hand and the "Yankee" Handyman Driver is ready for the next push. Spring returns handle automatically. Finger touch control for drive, rigid or reverse. For added versatility, accessories available for boring holes, driving Phillips screws, etc. At your Stanley dealer's. North Bros. Mfg. Co., Dept. 2, 215 West Lehigh Ave., Phila. 33, Pa.

YANKEE TOOLS NOW PART OF STANLEY

THE TOOL BOX OF THE WORLD
NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

Brilliant Italian Race Car Manufacturer

Pays Tribute to Dependable

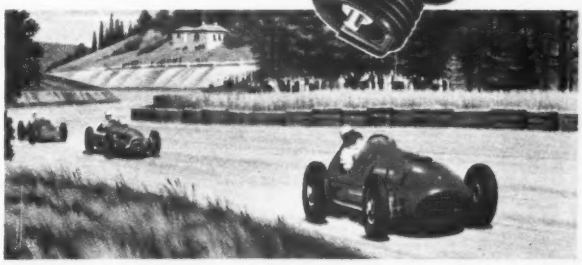
CHAMPION

Spark Plugs

SIGNOR ENZO FERRARI and one of his cars which scored sweeping successes in the Grand Prix of England, Grand Prix of Germany, and the Grand Prix of Italy. Ferrari-built sedans also captured both first and second places in the Mexican Pan-American 1,933 mile road race.

"The victory of Alberto Ascari in one of our Ferrari cars in the 22nd Grand Prix of Italy at 115.547 miles per hour average, established new all-time records for the Monza track, and also established the highest speed attained in European circuits. This 4½ litre 12-cylinder Grand Prix Ferrari was equipped with 24 Champion Spark Plugs which withstood perfectly the uninterrupted strain of instantaneous acceleration and equally instantaneous deceleration demanded by European type of racing tracks. At Monza, as on most European race courses, sharp turns and severe braking alternate with straight stretches where flat out speed is possible. We attribute a great deal of the merit of our success in the Grand Prix of England, Grand Prix of Germany, Grand Prix of Italy and the Mexican Pan-American Race to the magnificent performance and unfailing dependability of Champion Spark Plugs."

ENZO FERRARI



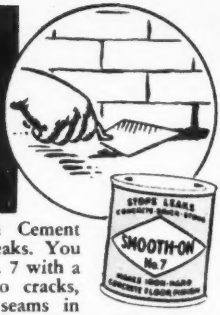
Alberto Ascari in front with the winning Ferrari in the Grand Prix of Germany.

FOLLOW THE EXPERTS

DEMAND DEPENDABLE CHAMPIONS FOR YOUR CAR

CHAMPION SPARK PLUG COMPANY
TOLEDO 1, OHIO

STOP CELLAR WALL LEAKS



Smooth-On No. 7 Iron Cement stops your cellar wall leaks. You can apply Smooth-On No. 7 with a trowel or stiff brush, to cracks, holes, porous spots or seams in concrete, brick, stone walls or floors. This effective Smooth-On Cement will stay in place, because it expands slightly as it sets. You can also use Smooth-On No. 7 to stop leaks in cisterns, swimming pools, troughs, fountains, septic tanks, etc. Use it too, to seal openings where piping passes through walls. Sold in 1, 5, 20, and 100 lb. sizes.

FREE REPAIR HANDBOOK 40 pages packed with helpful suggestions for repairs all around the home, shop and car. Also ask for leaflet describing the uses of Smooth-On No. 7. Write today.

SMOOTH-ON MFG. CO., Dept. 69D
570 Communipaw Ave., Jersey City 4, N. J.

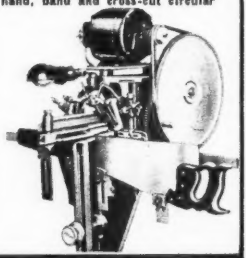
Do it with
SMOOTH-ON
NO. 7 IRON CEMENT

Make $20 to $30 a Week EXTRA MONEY!

With the high prices of food, clothing, etc., just think what you could do with extra money! Turn your spare time into CASH—sharpening saws with a Foley Automatic Saw Filer pays up to $3 or $4 an hour. Start at home—no experience necessary. "The first saw I sharpened with my Foley Filer came out 100%"—writes Clarence E. Parsons. No Canvassing—"I advertised in our local paper and got in 93 saws"—says M. L. Thompson. With a Foley you can file all hand, band and cross-cut circular saws.

FREE BOOK
Shows How to Start

It explains how you can get business from home owners, farmers, carpenters, schools, factories, etc. "I get work from 20 and 30 miles away"—says Charles H. Smith. Free Book "MONEY MAKING FACTS" tells just how to start. Send coupon today—no salesman will call.



Send Coupon for FREE BOOK

Foley Mfg. Co., 415-2 Foley Bldg., Minneapolis 18, Minn.
Send Free Book—"MONEY MAKING FACTS"

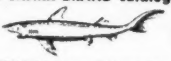
Name .....

Address .....

"SHARK" BRAND
Genuine Swedish Steel
Chisels

SHARK BRAND Paring Chisels are designed for professional use—the first choice of cabinet makers and hobbyists who want fine workmanship. Extra wide bevel, hardened and tempered for two-thirds of the length of the blade. Perfect balance . . . available with either Curly Birch Root or tough, plastic handles.

At better hardware dealers. Write for the SHARK BRAND catalog sheet.

"SHARK"  **BRAND**

ESKILSTUNA, SWEDEN

Sandvik Saw & Tool

Department I
47 WARREN ST., NEW YORK 7, N. Y.

'52 FORD
The ablest car on the American Road!

BOYS-IT'S FREE!

"THE WONDERS OF CHEMISTRY"

This exciting new book shows how to amaze your friends with chemical magic, describes many fascinating home experiments, tells of fun, thrills and big future opportunities for boys who know chemistry. Special atomic energy feature. Send today!

THE PORTER CHEMICAL COMPANY
27 Prospect Avenue Hagerstown, Maryland

$750 BUILDS 4 ROOMS & BATH!

WHY PAY RENT? For Seven Hundred and Fifty dollars and 30 days of your spare time you can build yourself this Beautiful Home.

Living room 11x15, Front bedroom 9x11, Back bedroom 10x12, Kitchen 9x11, Bath 5x8, Hall 3x4. Wind out steel Casement windows, Concrete block, stuccoed. $1.00 brings you Step-by-Step Instructions, Blueprint & Material List.

L. H. FARROW, Dept. B
Box 645 Columbus 16, Ohio

Quick-Wedge
SCREW-HOLDING SCREWDRIVER
unconditionally guaranteed

ASK FOR IT AT YOUR DEALER
KEDMAN CO. • 233 SO. 5th WEST • SALT LAKE CITY 1, UTAH

New motors scuttle 4 outboard chores!

NOW YOU CAN FORGET about opening and closing an outboard's gas valve and air vent. On the Scott-Atwater *Shift* motors, *an automatic control* does it *for* you. The gas valve and air vent open as you move the throttle to START — close when you stop the motor. This exclusive feature is one more reason why...

You get MORE with SCOTT-ATWATER!

Choose from four models 5, 7½, 10 and 16 h. p.

SEND ME FREE CATALOG! Dept. 80
Scott-Atwater Mfg. Co., Inc.
Minneapolis 13, Minn.

Address .....

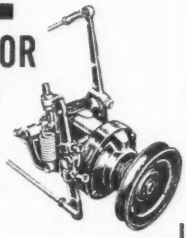
Name .....

City .....State.....

Export Dept.—American Steel Export Co., 347 Madison Ave., N. Y. 17. N. Y.

this ONE GOVERNOR

fits ALL popular farm & industrial gasoline engines



PIERCE LONG RANGE Universal Governor

- Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.
- Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

ONLY **$44.00**

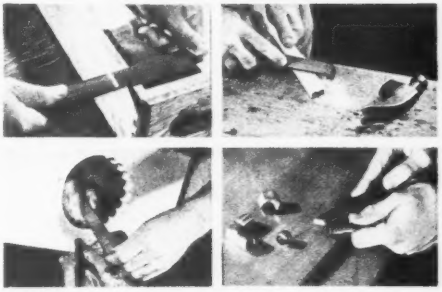
Includes Standard 5" Pulley. Send Check or Money Order. State Make, Model of Engine.

Write for Complete Information

DEALERSHIPS AVAILABLE

"World's Most Experienced Governor Manufacturer"

THE PIERCE GOVERNOR CO., Inc.
1600 Ohio Avenue, Box 1000
Anderson, Indiana, U. S. A.



The rasp that outgrew its name

It was originally designed for shoemakers. And it's still *called* a "Shoe" Rasp. But with its four types of cutting surfaces, users have found it "as versatile as a multi-blade jackknife." You can use it on hundreds of jobs—on wood, metal, plastics, leather, etc. On flat, concave, or convex surfaces. It's practically—

FOUR FILES IN *ONE*. . . . One side is half *Flat file*, half *Flat rasp;* other side is half *Round file*, half *Round rasp*. Just the thing for use around the house, farm, garage, workshop, or boat yard!

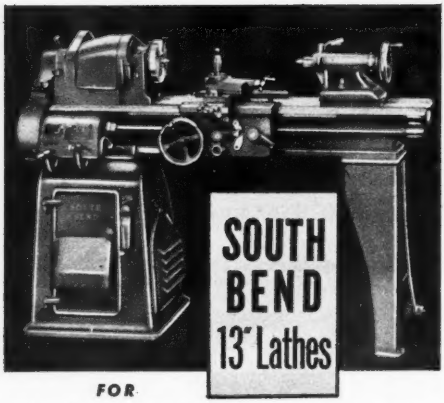
Ask your hardwareman for the handy Nicholson "Shoe" Rasp. Excellent, long-lasting quality. Also write us for *FREE BOOK, "File Filosophy,"* showing this and many other Nicholson files—plus valuable information on use and care of files.

NICHOLSON U.S.A.

NICHOLSON FILE COMPANY
49 Acorn Street, Providence 1, R. I.
(In Canada, Port Hope, Ont.)

BLACK DIAMOND TRADE MARK

NICHOLSON FILES *FOR EVERY PURPOSE*



FOR

ACCURATE, LOW-COST MACHINING

Popular wherever there are a variety of precision parts to be machined, these quality-built lathes are fast and easy to operate. Set-ups and job change-overs are quickly made. They give maximum production with high accuracy and low cost. Write for information on Lathes, Shapers and Drill Presses.

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

Send for this BIG NEW Hunt's WOODWORKERS CATALOG NO. 18

ONLY 15¢

NEW LOW PRICES

Offers greatest selection of fine domestic and imported woods--and hundreds of woodworkers items at bargain prices!

You'll save time and money with this big, new catalog. Contains everything wood craftsman needs. Shows 32 rare and fancy woods in color...43 veneer designs...275 scroll patterns...multicolor inlays, overlays, bandings...all kinds of tools, machinery, cabinet hardware, ornaments, mouldings...and pages of valuable tips, ideas, information, instruction. Send for your copy NOW. Only 15c

144 PAGES

QUICK DELIVERY
on maple, poplar, oak, mahogany, red cedar, cherry, walnut, and many others—all properly seasoned and kiln dried.

MAIL THIS COUPON--TODAY!

CRAFTSMAN WOOD SERVICE CO.
2729 S. Mary St., Dept. G4
Chicago 8, Illinois

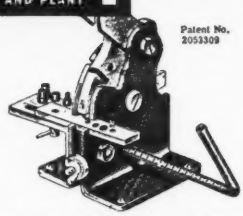
Send me the big, new, money-saving Catalog No. 18. Enclosed is 15c

Name_____
Address_____
City_____ Zone____ State_____

4 TOOLS IN 1
The Complete METAL WORK SHOP FOR HOME AND PLANT

Height 5"
Width 8"
Length 13"
Weight 6 lbs.

Patent No. 2053309



IT FORMS SHEARS PUNCHES RIVETS

Introductory Price
ONLY $6.95 DELIVERED

Ideal for hobbyists, craftsmen, radio repair, metal shops, garages, bicycle repair shops, model manufacturers, experimental laboratories, etc. Check must accompany order. Money refunded if not fully satisfied.

ALBERT J. TATU
Dept. 103, 85 Columbia Dr., Williamsville, N. Y.

HOBBYISTS! SHOPMEN! *Special* ONLY $54.50

PALMGREN "HOBB-E" Rotary, Index, Milling Table
Ideal for Model Parts or Shop Work

Mill-Grind-Drill-Index-Route curved or straight-Rabbet and Mortise on drill press or lathe. 8" Table, 4" Cross Feed, 360° Rotation, Accurately Graduated. Bolts to table. Order NOW! SAVE $100. Only $54.50. Less Rotary Feed $43.75. Write for "HOBB-E" Tool Circular.

CHICAGO TOOL and ENGINEERING CO.
8349 South Chicago Ave. Chicago 17, Ill.

Catalog OF 3000 Novelties 10c

Send 10c for amazing catalog of novelties, live animals, scientific supplies, hobbies, funmakers, planes & boats, looms, magic tricks, joke articles, unusual seeds, gadget timesavers, cameras, optical goods, projectors, movies, lucky jewelry, religious novelties, disguises, musical instruments, stamps, coins, puzzles, fortune tellers, radios, auto & bike accessories, telescopes, magnifiers, compasses, banks, smokers' gadgets, artists' supplies, printing sets, engines, motors, shockers, knives, billfolds, fireworks, guns, rifles, sports, books, games, plants, etc. Send name, address & 10c to:
JOHNSON SMITH & CO., Dept. 490, Detroit 7, Michigan

CA$H IN YOUR SPARE TIME

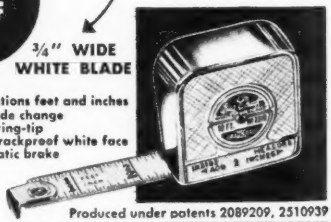
BIG MONEY IN OWN BUSINESS
YOU CAN MAKE UP TO $40 A DAY sharpening and setting circular saws for factories, builders, lumber yards — with NEW BELSAW COMPLETE CIRCULAR SAW SHOP. LOW COST. Sharpens 4 to 5 saws per hour, no *experience needed*, complete instructions. Send today for FREE Catalog.

BELSAW MACHINERY CO.
3607 Field Bldg. Kansas City 2, Mo.

CARLSON BIG CHIEF

MEASURES 10 FEET UP
Without Buckling

¾" WIDE WHITE BLADE



- Double graduations feet and inches
- Ten second blade change
- Easy-action swing-tip
- Easy-to-read crackproof white face
- Built-in automatic brake

Produced under patents 2089209, 2510939

Carlson & Sullivan, Inc. MONROVIA, CALIF.

Two DREMEL Electric SANDERS with STRAIGHT LINE Action for Guaranteed SCRATCH-FREE Surfaces

Choose the Dremel Sander that fits your needs. Both models have only 2 moving parts; easy one-hand operation; 10-sec. paper change; 14,400 strokes per min., 110-120 V., 60-cycle, AC-DC. PLUS Scratch-free, straight-line sanding action. DON'T SETTLE FOR LESS!

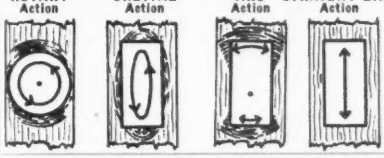
MODEL 2000
$24.50

MODEL 2000 FOR HEAVY DUTY CRAFT AND WOODWORKING PROJECTS—
If you need ample power for furniture and cabinet making, boat building or refinishing, resurfacing large areas—for building operations like woodwork, stairs, dry-wall joints, siding, etc.—the model 2000 will fill your needs perfectly. Also does a superb polishing job! It's the fastest seller in the field for rugged power at lowest cost, and users say they have never found a sander that compares with its smooth finishing performance. Weighs only 5 lbs., has 21 sq. in. of sanding surface; over-all size 3⅛" x 4½" x 7". Comes to you complete with accessories in the **all-metal storage-carrying case shown at left.**

MODEL 2000 PRICE INCLUDES this sturdy steel storage case, 25 asst'd. abrasives, and sheepskin polish pad.

ONLY STRAIGHT-LINE ACTION SANDS WITH THE GRAIN
Ask any professional woodworker about sanding action. He will tell you that only straight-line, with-the-grain sanding can produce a flawless finish. Follow his advice—insist on Dremel.

BEFORE YOU BUY ANY SANDER . . . COMPARE!



14,400 SANDING STROKES PER MIN.

MODEL "A"
$14.85

MODEL "A" FOR HOBBIES, REFINISHING, REDECORATING—
Dremel's lighter capacity, excellent all-purpose sander for home maintenance, unfinished furniture, hobby projects, etc. Wonderful wax polisher. A soothing massager! Only 2½ lbs. with 12" sanding surface.

Price includes 6 sandpapers, 1 sheepskin, 1 felt pad.

WHERE TO BUY—If dealer doesn't carry, remit in full for postpaid shipt. Or send only $2 now, pay postman balance plus postage and C.O.D. fee. **Five-day trial, money-back guarantee!**

DREMEL MFG. CO. DEPT. 142-D RACINE, WIS.

NOW! Upper Cylinder Lubrication That Resists "RED HOT" Temperatures

Upper cylinder areas in today's engines operate under excessive heat because combustion chamber temperatures may reach 2,500°. Since ordinary oil breaks down at 550° or less, valves, rings and other parts may operate without lubrication. Result: Excessive wear . . . loss of power . . . eventual engine failure.

Miracle Power used in the gas assures upper cylinder lubrication because it deposits colloidal synthetic graphite on vital surfaces. This special graphite lubricates effectively at temperatures higher than ever found in any automotive engine.

And in your oil, Miracle Power prevents DRY STARTING damage to other engine parts. That means smoother performance . . . and more power with less gas.

Try Miracle Power next time you get gas.

Miracle Power Division
THE AP PARTS CORPORATION
556 AP BUILDING, TOLEDO 1, OHIO

At better service stations, garages and car dealers, or use this coupon for introductory offer.

THE AP PARTS CORPORATION
556 AP BUILDING, TOLEDO 1, OHIO

Enclosed find $.....for which please send me *postpaid:*

..... trial cans of Miracle Power at 75c each (1 for gas, 1 for oil)
Please send me free literature on making my car last longer.

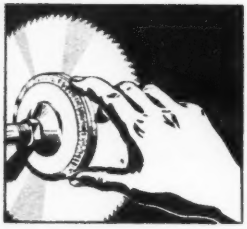
Name_____

Address_____

City_____ Zone_____ State_____

NOW—40 different cuts with AMAZING, NEW

Warren DADO SAWING WASHERS



ON YOUR SAW BLADE!

NO Warp . . .
NO Wobble . . .
NO Burning!

ONLY **$4.95** PER SET

4 Washers Mean Perfect Balance

Make clean, smooth parallel grooves at any angle—no chewing, no sanding. Just dial your cut—no trick screws, no vibration, strengthens blade for straight cuts. Warren Washers greatest improvement in 30 years—and most copied—look for the name on the box and washers. It costs no more to get the best—WARREN, IT'S GUARANTEED! At your dealer or order direct. Give arbor size—½", ¾", ⅝", 1"—sent postpaid.

WARREN DADO SAWING WASHERS CO.
Dept. 224 • Box 98 North End Station
Detroit, Michigan

WYTEFACE
TRADE MARK
STEEL TAPES

No squinting, no guessing when you use WYTEFACE Steel Tapes. Jet black markings (foot numbers in red) on a white background. Easier to read in *any* light. Faster, more accurate measurements. Rust-resisting, hard to kink, simple to clean.

Protected by U. S. Patent 2,089,209

K+E

"I'll take the WHITE one every time!"

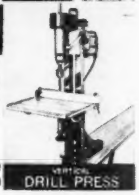
KEUFFEL & ESSER CO.

RETAIL PRICE $125.00

FACTORY TO YOU $79.95

SUPERSHOP is a PRECISION-BUILT WORKSHOP. 100% ball bearing. All running parts precision **ground.** Big capacity. Extra rugged. Amazing **value.** **Write for FREE catalog.**

BUY ON EASY PAYMENTS



POWER TOOLS, INC. 634 Yates Avenue Beloit, Wisconsin

FROM TROUT TO TARPON—FOR SURFACE POPPING BARNEY'S BEST!

Due to the terrific demand by expert fishermen everywhere the famous old "BARNEY" is again being made.

NEW—IMPROVED—ALL SIZES
FROM FLY ROD TO SALT WATER CASTING

Fresh Water Plugs: Fly rod-Baby Barney, 1/16 oz., #8 double hook, 85c; Spinning-Little Barney, ¼ oz., #2 treble hook, 95c; Bait casting-Barney, ⅝ oz., two #1 treble hook (see illustration), $1.15; Musky-Big Barney, ⅞ oz., three #10 treble hook, $1.35. **Colors,** all sizes, red-white, black, scale, rainbow, frog, mouse.

Salt Water: Light casting and trolling, salt water spinning—Salty Barney, 1 oz., three #2/0 treble hook, $1.65; Surf casting and trolling—Striper Barney, 3½ oz., two #6/0 treble hook, $2.35. **Colors,** both sizes, red-white, black, blue mullet scale, rainbow.

At leading dealers or write to Dept. M.

Mc Cagg MODEL COMPANY
Mt. Kisco, N.Y.

World's Fastest Boats!

Be a champion! Drive a high speed **Champion Boat!** Build one yourself from easy-to-follow plans — or we'll build for you. **Send 25c for catalogue** with pictures, descriptions, low prices of hydroplanes, 3 points, utilities, other models. **Champion Boats,** 1524 W. 15th St., Long Beach 13, Calif. Dept. 16-P.

BOATING SUPPLIES CATALOG

BARGAINS FOR YOUR BOAT!
70 PAGES!
FULLY ILLUSTRATED!

Contains pictures, descriptions of complete line specialized fittings, hardware accessories! Thousands of items available at low cost direct by mail! FULL OUTBOARD SECTION INCLUDED.

On first order of $10.00 or more, you receive credit for **$1.00** postpaid price on this book. Every boat owner should have it! Special UNDERWATER DIVING EQUIPMENT CATALOG Supplement included FREE with $1.00 BOAT CATALOG.

M & E MARINE SUPPLY CO., P. O. Box 691-W, Camden 1, N. J.

FAST, SMART & SNAPPY

FOLBOT

FOLDS IN TWO LIGHT BAGS

Paddles • Outboards • Sails
18½ ft. of stately, streamlined craft; wide beam, large decks, low center of gravity for sturdy performance with *greatest safety record*. Weighs only 65 lbs.—loads 750 lbs.—3 people and gear. One person can handle it. Easily packed and stored, fits inside car trunk. Wonderful for *cruising, hunting, fishing* in open seas, surf, rapids, or rocky waters. Rock resistant and leakproof. *No upkeep or fees.*

Set up in a jiffy. No tools required.

BIG $250 CRAFT
NOW ONLY
$139

Special off season price
Small deposit holds

Since 1933, thousands of enthusiastic Folbot owners, including guides, experts, champions, scout-leaders, explorers, Navies, royalty.

FREE giant illustrated catalogue. Write today: FOLBOT 42-09 Mt Hunter St. Long Island City 1, N. Y.

CORBIN PADLOCKS

the world's finest

When you want to be *sure . . . safe . . . really* secure, insist on a Corbin Extruded Brass Padlock. Exclusive features, finest, most rugged materials, plus precision craftsmanship make it the *finest padlock in the world.* Lasts a lifetime . . . worth the slight extra cost!

For real economy

Here's a superior quality padlock in the moderate price class. DEMAND Corbin quality always.

Be sure . . . with CORBIN® At Better Hardware Stores Everywhere

CORBIN CABINET LOCK DIVISION
The American Hardware Corporation
New Britain, Connecticut

handle ALL pulling jobs swiftly . . . easily . . . safely with

Snap-on INTERCHANGEABLE PULLER TOOLS

ON EVERY COUNT a shop is money ahead with Snap-on Pullers! *Money ahead* in first cost . . . because fewer Snap-on units cover a far wider range of pulling operations. *Money ahead* in time saved per job . . . right down the line Snap-on gives you the fastest, most efficient and adaptable pullers yet designed. *Money ahead* in durability . . . because they're *Snap-ons,* finely manufactured to traditional Snap-on standards of rugged strength and long life. Write for free catalog—covers the complete line of Snap-on Pullers and 4,000 hand and bench tools . . . *America's finest!* Never sold in stores . . . buy from Snap-on branches or direct from factory.

SNAP-ON TOOLS CORPORATION
8078-D 28th Avenue
Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation

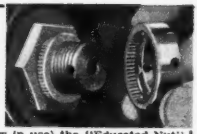
Sands, Cleans, Smooths, Polishes Electrically

Designed for industry, for professional work, this light, beautifully balanced, orbital-motion, SpeedSander is rapidly becoming a standard home appliance. With its powerful electric motor and all-ball-bearing construction, anyone can easily re-surface and refinish furniture, woodwork, metal surfaces or walls. It will quickly remove old paint, stain, or enamel down to the bare wood or metal; will sandpaper to a "piano finish"; remove rust and corrosion or "feather edge" a scraped fender. It will burnish pots and pans or with lambs wool bonnet, delicately polish fine furniture. It makes tedious, tiresome jobs fun—saves hands! In design, convenience and efficiency it is today's finest sander regardless of price. Ask your local dealer to demonstrate it.

Write for Catalog

SpeedWay MANUFACTURING CO.
1866 So. 52nd Ave., Cicero 50, Illinois

5,000 MORE MILES From FRONT TIRES



"Educated Nut" Stops "Scuffing"—FREE TRIAL!

Long used by truck fleets (200,000 now in use) the "Educated Nut" is now available for all passenger cars. Allows you **perfect** adjustment on front wheel bearings every time. Replaces front wheel bearing nuts now on your car. When you "back-off" your present front wheel bearing nuts to insert cotter pin, you loosen your bearing adjustment enough to cause as much as ¾" wobble on the tread. This causes "scuffing" and "snaketracking," costs you speed, rubber, gas, brakelining and $$$$$.

THE EDUCATED NUT

- Adds up to 5,000 miles more tire life
- Stops bearing breakage
- Makes steering easier, safer
- Increases brake efficiency, stops 90% of all brake squeaks

HOW TO INSTALL

Screw threaded piece up to perfect adjustment (turn up tight, then back till wheel revolves free). Then line up cotter pin holes in cap with hole in spindle, snap on steel cap, insert cotter pin. You never "back-off" more and destroy adjustment to insert cotter pin as with old style nuts.

FREE TRIAL—Send no money. Just send name and address, make and year of car. A complete set of "Educated Nuts" (2 nuts, 2 caps, 2 pins) and instructions will be sent postpaid. Install and try. Feel the difference in driving immediately! Within two weeks, either return the complete set at no obligation or send just **$2.98**

Dealer, truck owner, inquiries invited.

POLIZZI PRECISION PRODUCTS COMPANY Dept. 4-M
5024 Lankershim Blvd., No. Hollywood, Calif.

TRANSFORMER WELDER $18.95 FOB QUINCY

Complete with everything. Ready to plug in. 110 volts A.C., 15-30 amps. 5 heats. Welds metal from 1/16" to ¼" using 1/16" to ⅛" standard rods. One year guarantee. 10-day trial. No C.O.D. We also make welder for 16-22 gauge metal, $3.95; ⅛" metal $6.45.

ESSAY MFG. CO., INC., Dept. 101, Quincy 69, Mass.

NEW smarter way to check your engine's performance!

NEW!

Stewart-Warner

MOTOR MINDER

Spots motor trouble as you drive! Motor Minder uses vacuum gauge mechanism . . . helps you get peak performance from your engine. Shows condition of carburetor, valves, timing, piston rings, manifold, etc., at all times. Handsome, easy-to-read dial. *Illuminated* for night driving. Easy installation. Only $10.95. At your dealer. Or write:

STEWART-WARNER

Instrument Division, Dept. V-42
1850 Diversey Parkway • Chicago 14, Ill.

WANT TO SAVE GAS? BE PREPARED IF RATIONING COMES

AMAZING GANE NEEDLE | TRY ONE FREE IN YOUR CAR!

1/2 MILLION NOW IN USE!

MANY GANE NEEDLE USERS REPORT UP to 25% more mileage, faster pickup, easier starting and smoother idling.

NOW TEST A GANE NEEDLE IN YOUR CAR for ten days, then compare your mileage and performance. If satisfied, send $1.50 per needle (8 cyl. cars take 2). If not satisfied, just return it—fair enough? Since authorities differ on its merits and some users report no improvement, TRY BEFORE YOU BUY! (Gane Needle replaces idling adjustment screw in carburetors—easily installed in a few minutes.)

FREE

Auto Economy Manual

Tells how to save gas, tires, brakes, etc. Also introduces many new economy products. (Sent absolutely free to all who try Gane Needles.)

WRITE TODAY. ENCLOSE NO MONEY. PAY POSTMAN NOTHING. Just send us your name, address, and make and year of car.

NATIONAL AUTOMOTIVE RETAIL CORP., Dept. K-4
605 West Las Tunas San Gabriel, Calif.

Make your lawn furniture look like new!

Protect, preserve, beautify children's playground equipment, garden tools, metal screens

If you prize it— "KRYLON-*ize*" it!

Take Krylon Acrylic coating outside with you—and, next fall, your prized possessions will be as fresh and bright as you make them this spring! "Krylon-izing" seals out water, air, moisture, dirt. Rustproofs metal. Practically banishes wear and tear on almost any metal, wood, leather, paper object. So easy to use—just press a button, spray it on. Dries quickly, lasts indefinitely. Waterproof, non-flammable. Won't change color, crack or dry out. You clean "Krylon-ized" objects with the touch of a damp cloth.

CRYSTAL CLEAR, BRIGHT WHITE, ALUMINUM

Clear is transparent as glass. Colors last longer, clean easier, are easier to apply than paint or enamel. Get all of them at your hardware counter in 12 oz. aerosol spray cans.

KRYLON, INC., 2601 N. Broad St., Philadelphia 32, Pa.

NEW BOAT

WITH WINGS!

Flies through water... Easily Built from Plans or Low Cost Kit

See it on Front Cover this magazine . . . Story on page 84.

If you like fast boating or thrill of flight at low altitude, get the facts about the new **HYDROFIN**, just introduced in America. Flys over water with hull carried over tops of small waves. No buffeting or pounding, no hull drag.

HYDROFIN gives actual flight through water. Use your own outboard. Smooth comfort is assured with new variable water prediction & shock-absorbing device. Handles well in choppy water. Speeds up to 55 M.P.H.

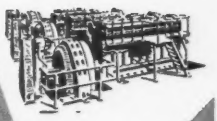
HYDROFIN provides easy take-off. Special spray deflector. Air drive if preferred. Simplified rudder, mechanism & controls. Low maintenance. *Hydrofoils supplied ready to fit.*

GET THE FACTS NOW!

Be ready for summer . . . have more fun with **HYDROFIN.** Send only $1.00 (Postage and Handling) for more complete details, plan, speed data, body designs, how it is built, etc.

ATLANTIC HYDROFIN CORP.

Dept. M - 615 S.W. Second Ave., Miami, Fla.



SPEED

Great basic invention—the dynamo. Its power turns our wheels, operates our factories, provides the speed required to run our modern world.

The Plumb Hammer is the pace-maker on any job. Scientific design and perfect balance make it much faster, easier to use.

The special analysis steel heads are scientifically tempered with four separate zones of hardness. Hard striking faces . . . Sturdy claws for prying . . . Hard-biting, long-wearing nail splits . . . Tough yielding mid-sections.

Handles are turned from resilient, second growth hickory.

Use a Plumb Hammer—it's the modern hand tool for modern craftsmen—first choice over all others.

The black head with the red handle — exclusively **PLUMB**

Quality Comes FIRST
PLUMB
is FIRST in Quality

PLUMB®

HAMMERS • HATCHETS • AXES • FILES

Every man who uses a wood rule listens for that smooth sharp click action as the joints fall into place. Try the Guardsman today. New safe lock joint assures the finest trouble-free click action you've ever seen . . . New methods of boring and painting assure absolute weather-proofing for the first time in any wood rule . . . Add to this the finest materials and you have the Guardsman, world's finest wood rule. See it today at your local hardware store. #996 regular reading, #996F flat reading. Six ft. only, $1.50.

MASTER

® MASTER RULE MFG., CO. INC. Middletown New York ®

WOOD AND STEEL TAPE RULES

No place is too far

WHEN YOU OWN A WHIZZER

With your own Whizzer, you'll ride anywhere you want to go—cross-country or in town! Dependable, enjoyable transportation! A whole new world of fun for you!

5 to 35 M.P.H. Up to 100 miles to the gallon. 3 h. p. motor.

WHIZZER PACEMAKER MB710, illustrated, is a beautiful, complete motorbike. 3 h.p., 4-cycle, 138 c.c. motor. Headlight, tail light, built-in generator. 5" expander-type rear brake. E-Z-Glide clutch. Dual spring telescopic front fork. Big 3-point-mounted saddle. Heavy-duty frame and wheels. Chrome carrier available at additional cost. See, ride, own a Whizzer Pacemaker! At your dealer's, or write for free booklet.

WHIZZER MOTOR CO., 322 South Sanford, Pontiac, Michigan

HANDEE®

tool of 1001 Uses

- **Handicraft Hobbies**
- **Household Repairs**
- **Auto Maintenance**

Everyone Needs a Handee!

Absolutely the finest in hand power tools. Cool running, controlled power for those countless small jobs. A whole toolshop in your hand . . . grinds, drills, engraves, cuts, polishes, saws, routs, sands . . . pays for itself quickly!

HANDEE with 51 accessories, in fitted steel case **$27.50**

HANDEE with 7 basic accessories **$19.95**

MONEY BACK GUARANTEE! Liberal 10-day free trial offer. Get HANDEE at your dealer's today, or order direct postpaid.

FREE! New HANDEE Catalog ... shows a host of practical applications. Write today!

CHICAGO WHEEL & MFG. CO.

Dept. MI. 1101 West Monroe Street, Chicago 7, Ill.

Palley's 1952 CATALOG - 230 PAGES

Packed with **SENSATIONAL VALUES in WAR SURPLUS, FACTORY CLOSE-OUTS and GENERAL MERCHANDISE!** 1000's of items for the Mfgr, Mechanic, Sportsman, Photographer, Hobbyist, Home Owner, etc. **BIG SAVINGS** on Clothing, Housewares, Hardware, Foam Rubber, Hand & Power Tools, Outdoor & Camp Equipment, Industrial Tools & Supplies, Aircraft Parts, Metals, Plastics, Gadgets and a huge stock of Hydraulic Supplies—Cylinders, Pumps, Valves, Motors, etc.

SAVE UP TO 85% IN WAR SURPLUS!

Send Only 50¢ (for handling & mailing) Dept. MI-4

PALLEY SUPPLY COMPANY 6321K San Fernando Road GLENDALE 1, CALIF.

Holds Tight

ask your dealer for

Red Devil

triangle points

RED DEVIL TOOLS, IRVINGTON 11, N. J., U. S. A.

ALNICO **MAGNETS** LIFT 225-lb.

AMAZING PERMANENT MAGNETS—WILL NOT WEAKEN! NON-ELECTRIC. Retrieve guns, tackle, tools and other steel items from lake, river, plating tanks, drains or other hard-to-reach spots. Recover drills, taps, etc., from floor sweepings. Clear alley of harmful tacks, nails. Many other uses listed. Pays for itself quickly. GUARANTEED: Try any magnet one week. Money refunded if you are not well-pleased.

No. S-725 (Weighs 54 Oz.) Has a pull of 225 lbs. on a steel block $15.00
No. S-675 (Weighs 49 Oz.) Has a pull of 175 lbs. on a steel block $10.50
No. S-650 (Weighs 41 Oz.) Has a pull of 150 lbs. on a steel block $ 8.50
No. S-550 (Weighs 14 Oz.) Has a pull of 50 lbs. on a steel block $ 4.00
No. S-530 (Weighs 8 Oz.) Has a pull of 30 lbs. on a steel block $ 3.00
No. S- 30 Hobbyist assortment of six small magnets.....$ 1.50

Send Money Order or Check. We pay postage. No C.O.D. Shipments.

MIAMI MAGNET CO., 3240 N. W. 27th Ave., MIAMI 42, FLA.

Start Your Own Welding Business with a HOBART "Simplified" arc welder

Write today for complete details on this PROFIT MAKING EQUIPMENT! No Obligation

Go after WELDING jobs that Pay Big Money!

Never before has the demand for welding been so great—the profits so large. That's why smart operators everywhere are setting up their own welding business . . . and you can do the same.

SIMPLY CHOOSE from our complete line, the welder that best suits your needs—gas or electric drive—portable or stationary. The big pay jobs are waiting, so don't miss this opportunity. Write today.

"One of the world's largest builders of arc welders"

HOBART BROTHERS CO., Box SM-42, Troy, Ohio

PROFESSIONAL DISSECTING KIT

$4.95 postpaid

For Microscopic Slide Work in **Biology Botany Zoology**

A special purchase for our microscope customers. The professional equipment in this complete kit is worth more than $15—made to the specifications required by researchers and biologists. Ten pieces in fitted hardwood case: two fine steel scalpels, two prof. dissecting instruments, one magnifying glass, one special scissors, one special tweezers, three blank slides. Perfect for universities, doctors, students. Postpaid **$4.95**

IMPORTED 300 POWER MICROSCOPE $14.95!

LABORATORY MODEL POSTPAID

Triple Revolving Turret Has 100, 200 and 300 Power Objective Lenses

No frills, just excellent optical qualities, delicate adjustment and solid construction. Its quality and price astounded biology instructors. A lifetime bargain for students, schools, labs, research, amateurs. *Anyone can now own one!* (Performance cannot be duplicated for $75.00.)

FEATURES: Fine micro adjustment, adjustable plano substage mirror. Dovetail hardwood case included free.

USES: Animal, plant and mineral research. Study plant cells, microscopic animal life, crystaline structure, etc. See the complex anatomy of tiny insects, larvae, eggs. 300 magnifications makes a fly look as large as a bird. If you are not amazed by the quality of this microscope send it back in 10 days. Your money will be refunded immediately. $5.00 deposit on C.O.D.'s. Send check, cash or money order for $14.95.

"HUNTING WITH THE MICROSCOPE"

Gaylord Johnson's intensely interesting 93 page book—how to hunt microscopic big game, micro detective work, how you see the oddities of the invisible world. Postpaid **60c**

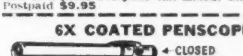
HALF PRICE SALE—IMPORTED MAGNIFYING GLASSES

2" dia. ---$1.00 2½" dia. -$1.35
3" dia. ---$1.95 3½" dia. -$2.25
4" dia. --$2.50 (all postpaid)

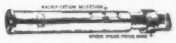
Navy Type Mark XX 20 POWER TELESCOPE

$30 value. Fine optically ground achromatic lenses, fully coated. Same power as standard artillery observers spotting scope. Precision all metal construction. Extends to 15¼ inches. Rust and salt-spray resistant. A valuable ship and boat owners possession now at a price everyone can afford! Shipped in fitted hardwood case. Postpaid **$9.95** **$9.95**

6X COATED PENSCOPE *$4.95* postpaid



POCKET TELESCOPE fits in your pocket with a safety clip like a fountain pen, extends to form a powerful scope for spotting game, watching sports events, etc. A special bargain at this low price.



20, 40, 60X POCKET MICROSCOPE

You select power, then focus with spiral ring. Finest optics, a new precision instrument for field use! Postpaid -------- **$4.95**

the AKRON 4400 SUNSET BLVD LOS ANGELES 27, CALIF. OPTICAL DEPT. 4-M

Money-back 10 day guarantee on all items. Send check, cash or M.O. Free catalog on request or included with your order. Calif. residents add 3% state tax.

BUY NOW at REDUCED PRICES

LIMITED TIME ONLY.

Finliner

ORIGINAL and GENUINE

ADDS *Beautiful* CUSTOM STYLING TO YOUR CAR

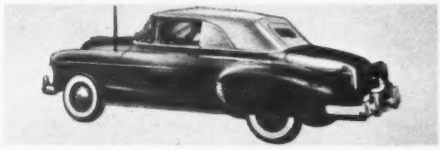
Smart, New Exclusive Distinctive

Only genuine Finliners have the "Bulls Eye" unbreakable ruby red, reflector Lens.

FINLINERS FOR THE HENRY "J"

Complete, ready to install. Fit all models. Easy to install with two screws. No painting necessary.

ONLY **$17.95** PER SET



For Chevrolets, Fords, Pontiacs, Hudsons

Add handsome streamlining and a smart new look to your car. Added tail lights serve as safety feature, leaving original tail lights as independent stop or turn indicator lights.

BRASS MODEL

For De Luxe installation at your body shop . . . To be welded, soldered, and refinished . . . Will look like actual part of fender . . . Available —1949, '50, '51, '52 Pontiac, 1949, '50, '51 Ford, Chevrolet '51, '52 only.

ALUMINUM MODEL

Quality — Perfect fit . . . Can be painted before installation . . . Mounted with four bolts . . . Can be installed by owner . . . No welding or soldering . . . No filing or handfitting . . . No refinishing of fender . . . No puttying—Just paint and install . . . For 1949-'50-'51-'52 Chevrolets, Pontiacs, 1949-'50-'51 Fords, Hudsons.

Be sure to specify Make, Model, and year of car.

ORDER FROM YOUR LOCAL DEALER OR DIRECT FROM

UNITED MARINE MFG. CO.
3811 E. 67th St. Kansas City 5, Mo.

Can't beat it - for EXPERT SANDING

PORTER-CABLE Guild

POWERFUL Motor-Driven SANDER

MODEL 106

Only $49.50

NOW – give your woodworking projects a *fine piano finish* . . . 10 times faster than hand sanding!

Abrasive pad travels at high speed in ¼" orbits. Grits move in overlapping circles—with, against, and across the grain. No tracking – no gouging – no burning. Makes a smooth, even, uniform surface every time!

MOTOR DRIVEN—NOT A VIBRATOR

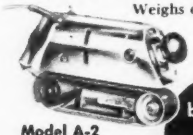
Not a vibrator. Husky AC-DC motor – 4000 RPM under load. Gearless drive – needs no lubrication. Dust-free air intake. A professional type tool throughout. Patented paper clamp holds ⅓ of standard 9" x 11" sheet tight. Weighs only 6 lbs.

Leaves no fur—provides smooth, flat surfaces

Levels glued, butt, miter joints

Chamfers edges—fits frames

Sands large areas at high speed



Model A-2 Guild Belt Sander

Can't beat it—for HEAVY SANDING

Popular with builders. Use it for heavy duty stock removal; sanding large areas; taking off paint; grinding metal, stone, composition. Belt, 2" x 21". Speed, 600 SFPM. Weight, 9 lbs. Only $62.50.

See Guild Sanders at your dealer . . . or mail coupon today.

PORTER-CABLE MACHINE CO.
7184 N. Salina St., Syracuse 8, N. Y.

Please send complete information on
( ) Guild Orbital Sander ( ) Guild Belt Sander

Name.....

Address.....

City..... State.....

Manufacturers of SPEEDMATIC and GUILD Electric Tools
In Canada, write: Strongridge, Ltd., London, Ont.

Telescope Maker's Page

[*Continued from page* 153]

easy viewing and can be removed for storage.

The Chrysler Corporation is looking for astronomers to help produce range finders at the Company's Airtemp Division in Dayton, Ohio, according to C. E. Buchholzer, Airtemp President.

"They know a few tricks of the trade," Mr. Buchholzer said, "and we can apply that kind of know-how to building range finders." Airtemp already has advertised for amateur astronomers in Dayton newspapers. Chrysler Corporation has a contract to build range finders for the armed services, for which a 72,000 sq. ft. addition is being completed on the Dayton Airtemp Plant. Between 3,000 and 4,000 people will be required on the project when in full production. •

☆ GIANT ☆
ASTRONOMICAL TELESCOPE

Ready for use. 6 ft. tripod. 100 diameters magnification. (10,000 area magnification). Extra eyepiece especially suited to observing Milky Way, Nebulae, Comets, Double Stars and Star Clusters. Sun projector lens for watching sun spots. Full power and clear vision guaranteed. $15.00. 25% deposit on C.O.D. orders.

Shipped via Express F.O.B. Riverhead

SUFFOLK SCIENCE SERVICE
DEPT. AT RIVERHEAD, N. Y.

Make Your Own
TELESCOPE
Write today for free price list of CORRECT instructions and supplies
John M. Pierce, Highland Road, Springfield, Vermont
Where Amateur Telescope Making Started

HIGH POWER TELESCOPE
60 POWER-ALUMINUM TUBES—OPENS TO 33"
Variable Power Adjustable to 15X, 30X and 60X

$5.95 Leather Case Included
5 Sections. 4 Ground & Polished Lenses. Also used as 50X Microscope. Ready to use, only $5.95. POSTPAID.

CRITERION CO. 438 ASYLUM ST.
DEPT. MA3 HARTFORD 3, CONN.

100 POWER...

Telescope Lens Kit COMPLETE ONLY $3.00

See The Wonders Of The Sky.—Explore planets, island universes, new stars and million other phenomena. Lens kit consists of a 47 M.M. dia. 52 in. focal length ground and polished objective lens and a 100 power astronomical eyepiece lens. Simple to follow directions for assembling in one or two evenings. Mounting and tripod not included but easy to make from directions. Money back guarantee.

LE MAR SCIENTIFIC CORP., Dept. G-4, 3412 W. Jackson Blvd., Chicago 24.

EVERYTHING For The AMATEUR
TELESCOPE MAKER
Make your own telescope. Quality supplies guaranteed. Complete kit $4.50 up. Pyrex mirrors made to order. Aluminizing. Prisms—eyepieces—etc. Free catalog. Instructions—10c.
PRECISION OPTICAL SUPPLY CO.
1001 East 163rd St., New York 59, N. Y.

PRINTED IN U.S.A.

Page

storage.
g for as-
nders at
Dayton,
Airtemp

de," Mr.
hat kind
s." Air-
amateur
Chrysler
d range
which
leted on
,000 and
project

COPE
diameters
ification).
observing
ible Stars
lens for
and clear
eposit on
erhead
ICE
D. N. Y.

E
ECT
Vermont
rted

OPE
as
D.
UM ST.
3, CONN.
$3.00
universes,
sts of a 47
jective lens
o follow di-
and tripod
k guarantee.
Chicago 24.

ER
s guar-
rs made
tc. Free
Y CO.
Y.

PRINTED IN U.S.A.

Sens
ON
BU
..pay
for e
He
nat
ne
sim
ulo
Pla
rea
TW
No hou
to-face
equipm
also sho
daily p
A FOR
Million
cards, p
against
MAGIC
through
take ou
plan wi
Just ma
ENORM
A creat
sell you
sands of
Beautif
"one of
to twen
Beautif
tions fo
artistic
sent fre
The
Bo
No o
thou
be m
our
COS
BOX
AND
CUM
—TR
ERS
PICT
PAP
CHA
—AD
PLA
BUC
SAN

Get into . . .

PLASTIC LAMINATING AT HOME!

Sensational New "ONE MAN BUSINESS" . . pays $10 to $20 profit for each dollar of cost.

Make $20 to $30 a day by our MAGIC MAIL PLAN . . . get orders and cash from your mailman!

Here's the newest and most fascinating of all home-operated businesses. For the first time, a simplified machine brings the fabulous profits of Plastic Sealing and Plastic Laminating within the reach of the small operator. Can be operated in a corner of the kitchen, basement, or garage. And any man or woman, regardless of age, education, or experience—can learn this interesting work *in a few minutes of reading*—can turn out professional jobs *after one hour's practice.*

TWO EXCITING FIELDS FOR BIG PROFITS!

No house-to-house canvassing. No face-to-face selling. We not only supply the equipment you need for the work, but also show you exactly how to cash in big daily profits from two big demand fields.

A FORTUNE IN PLASTIC SEALING

Millions of people want to protect valuable cards, photographs, documents and papers against wear, soil, and damage. By our MAGIC MAIL Plan you get this business through the mails. Open envelopes and take out money and orders. Details of this plan will amaze you. It will be sent free. Just mail coupon.

ENORMOUS PROFITS IN LAMINATING

A creative, artistic business. Gift shops sell your entire output. Just a few of thousands of giftwares illustrated on this page. Beautiful colors. Endless designs. Exclusive "one of a kind" appeal brings sales at ten to twenty times the cost of materials. Beautiful illustrations and instructions for making these artistic novelties sent free.

The opportunities in Plastic Laminating are so big that space here does not permit even skimming the surface. To get any idea **FREE** at all of the size of these markets and your place in this sensational business you must read the details. See for yourself how easy it is to do the work—how you can put plastic sheets into your machine and take out a fortune—how money and orders come to you in the mail—how gift shops clamor to get more and more of your creations—how you can start with one machine and build up a big production plant with others doing the work—how you can get money and business from every State in the Union—how you can achieve independence without study or experience.

RUSH COUPON

Never before has such an opportunity been offered the small, home-operator—an opportunity to gain complete personal independence in a big money business of your own. Don't lose a minute. Get the facts at once. All information, fully illustrated with pictures, is free. Send the coupon—or send your name on a penny postcard. There is no charge now, or at any other time. We may be limited in the number of Warner Laminators that can be made up, so don't put this off. Send for the information on this exciting opportunity today.

WARNER ELECTRIC CO.,
1512 Jarvis, Dept. 6-D, Chicago 26, Illinois

Thousands of Beautiful Art Creations

No one yet has been able to list the thousands of gorgeous articles that can be made by Laminating as explained in our Free Information. Just a few are COSTUME JEWELRY—CIGARETTE BOXES—JEWEL CASES—GLOVE AND HANDKERCHIEF BOXES—CUFF LINKS—NOVELTY BUTTONS—TRAY—CANDLESTICKS—COASTERS—CLOCK CASES—LAMP BASES PICTURE FRAMES—BOOK ENDS—PAPER KNIVES—KEY CHAIN CHARMS—CHECKERS—CHESSMEN—ADVERTISING SIGNS—NAMEPLATES—BOOKMARKS—BELT BUCKLES—TIE RACKS—KEEPSAKES OF ALL KINDS.

$5-$10-and $20 BILLS COME TO YOU IN THE MAIL

By our MAGIC MAIL Plan you sit at home, send out mail, and get back money and orders. Additional profits in supplying local people with lifetime protection for SNAPSHOTS—IDENTIFICATION CARDS—DISCHARGE PAPERS—DRIVERS' LICENSES—SOCIAL SECURITY CARDS—VOTERS REG. CARDS—MENUS—BIRTH CERTIFICATES—CREDIT CARDS—BIRTH AND WEDDING ANNOUNCEMENTS—RAILROAD PASSES—IMPORTANT DOCUMENTS OF ALL KINDS.

Lifetime protection. See how laminating protects against wear, soiling, and moisture damage with its smooth, flexible, plastic covering on each side. LIFETIME PROTECTION needed for valuable or sentimental objects of all kinds—even a priceless whisp of hair can be laminated. Think of the countless thousands of profit items for your Laminating Press.

WARNER ELECTRIC CO. Dept. 6-D
1512 Jarvis, Chicago 26, Illinois

Rush complete information with illustrations showing the things I can make and the money possibilities in Plastic Laminating. All this is free. I do not pay a penny now or at any other time. No salesman is to call. Send all facts by prepaid mail. Be sure to tell me how I get orders and money from my Postman by your MAGIC MAIL Plan.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Perfect Circle's 2 in 1 chrome piston ring set

Your car and your money . . . both will go farther with a set of 2-in-1 Chrome Piston Rings. For the 2-in-1 Chrome Set *more than doubles the life* of cylinders, pistons and rings!

Positive oil control is assured because *only* the 2-in-1 Set provides two interchangeable expander springs with each oil ring. For the first time, mechanics can select the spring pressure that's *right* for your engine. And with 2-in-1 you'll enjoy smooth, instantly responsive power, right from the start with no tedious break-in period.

If your car has lost its pep . . . if it's wasting gas and oil . . . give it a whole new life of sustained power and oil economy with Perfect Circle's 2-in-1 Chrome Set! Ask your Doctor of Motors, your reliable mechanic, to install it in your engine. He'll respect your judgment!

Perfect Circle

PISTON RING

The Standard of Comparison

rcle
ON RING
omparison